

Chemical Week

August 9, 1952

Price 35 cents



Plant builders still have fat backlog of orders; worries: red tape, steel p. 16

◀ **Community relations: here's how citizen-scientists win friends for their firm p. 21**

What's behind the current boom in sponsored, institute-conducted research? p. 32

◀ **Synthetic detergents bid for slice of \$130 million toilet bar sales p. 39**

CW Camera sees domestic mercury mines bustling as import price climbs p. 52

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Chemical Week

Volume 71 Number 6
August 9, 1952

OPINION	2
NEWSLETTER	11
BUSINESS & INDUSTRY	15
DISTRIBUTION	26
RESEARCH	32
BOOKS	37
SPECIALTIES	39
MARKETS	49
PRODUCTION	52
BOOKLETS	56

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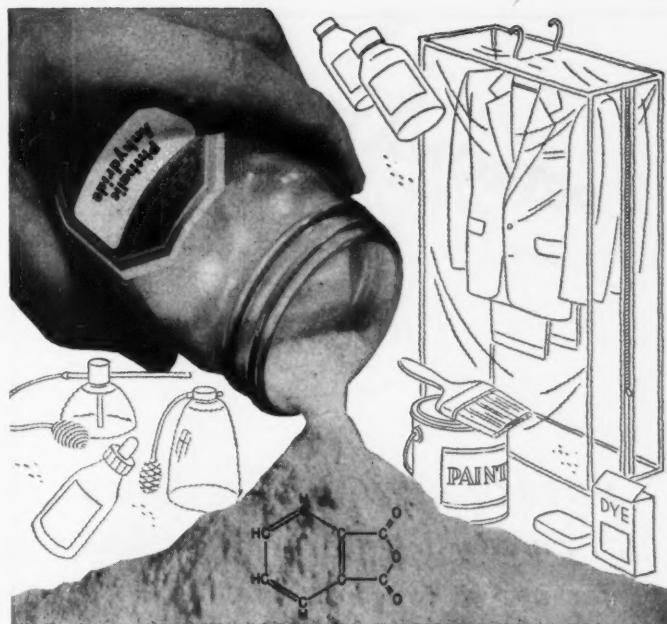
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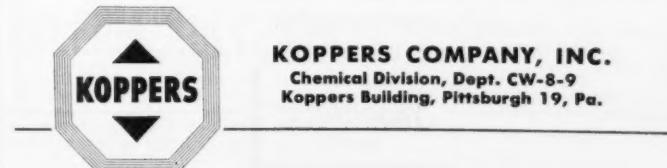
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OPINION . . .

No Nooch, This

TO THE EDITOR: What in . . . is a "Nooch" filter . . . which you mention (and picture) as being used in the manufacture of globaline by Wallace and Tiernan—(July 26)?

Of course, the old pharmacist had a nutsch, and so did the old ore dresser and metallurgist. . . .

New invention, misinformation, misspelling?

C. L. MANTELL

Consulting Chemical Engineer
New York, N. Y.

TO THE EDITOR: Your "constant reader" takes occasion, on looking through the July 26th issue, to comment . . . on a transliteration of a German technical term.

I have seen many variant misspellings of the German word for a type of filter widely used in the chemical industry. . . . Your spelling . . . [was] doubtless occasioned by assimilation with the laboratory filter introduced by the chemist Gooch.

The authentic word, as I found on consulting a complete German technical dictionary . . . is properly spelled Nutsche. . . .

THOMAS H. CHILTON

Technical Director
Industrial and Development
Engineering Division
E. I. du Pont de Nemours & Co., Inc.
Wilmington, Del.

Reader Chilton answers Reader Mantell (and the 32 others who caught our over-Anglicized German). One CW editor has been presented with a German dictionary—complete with umlauts.—ED.

X-Disease

TO THE EDITOR: In the Newsletter Section of your July 12 issue, you refer to chlorinated naphthalenes as one of the causes of the mysterious "X-disease" in cattle. We would like to point out that the University of Tennessee and other experimental stations have been investigating this disease and found *many* substances which can cause the "X-disease." Daily doses of these substances have been fed to young calves by experimenters. Their conclusions have been based on these "forced" feedings.

It has not yet been proven that chlorinated naphthalenes have caused any of the cases of "X-disease" in cattle on farms. In fact, to our knowledge, chlorinated naphthalenes are not used in wood preservatives or



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O P I N I O N

other products used on the farm to which cattle might be exposed.

J. M. COLE
Halowax Products Division
Union Carbide and Carbon Corp.
New York, N. Y.

TO THE EDITOR: . . . It is mentioned in your Newsletter (July 12) that the University of Tennessee Experiment Station labels chlorinated naphthalenes as one of the causes of the mysterious "Disease X" of cattle. . . You further mention that "the malady was first recognized in 1941, is now pinned down to wood preservatives and other agricultural specialties containing the toxic compounds."

Being in the wood preservative business we are much interested . . . have been trying to follow it up and investigate thoroughly. To our knowledge, however, there is no wood preservative used which contains chlorinated naphthalenes . . . so we see little or no basis for the inference that certain wood preservatives may cause the disease.

We furnish a lot of pentachlorophenol wood preservatives . . . there has been a lot of investigation on its toxicology . . . effect on cattle and other animals with no apparent ill effect. . . We understand that some of the creosote people have taken the position and have broadcast news that "creosote is cleared" from these implications.

. . . Obviously such an article may be used to discredit other chlorinated derivatives, however harmless they may be. . .

A. DALE CHAPMAN
President
Chapman Chemical Co.
Memphis, Tenn.

If any creosote seller is citing CW's report on the University of Tennessee research to condemn pentachlorophenol, he is misquoting what we said.

Our Newsletter item referred, specifically and explicitly, solely to the University's work on chlorinated naphthalenes and said plainly "they had been labelled as one of the causes of Disease X."

Here is additional data:

- Work at the University of Tennessee and at University of Illinois (among others) essentially clears pentachlorophenol as a preservative for posts and farm buildings.

- The USDA supports the Tennessee observations on chlorinated naphthalenes. A report on the subject was accepted by "Science" in April, will probably be published in September.

- Virginia Agricultural Experiment

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FOR EXAMPLE:

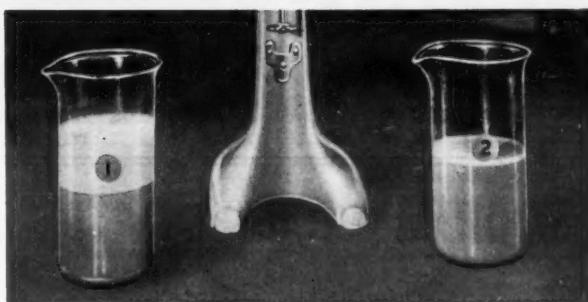
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O P I N I O N

Station researchers will also say in the July "Virginia Journal of Science" that chlorinated naphthalenes (as used in lube oil additives) are one cause of Disease X.

• Sinclair Oil, which cooperated in the Virginia project, has changed its farm lube oil formulations to eliminate the additives under question. (Oddly enough, some farm animals seem to have a yen to lick off under-chassis greases.)

• The USDA is planning experiments with other compounds.

• Importantly, chlorinated naphthalenes are cited as only one possible cause. Experiment Stations have reproduced the disease by feeding alfalfa pellets, timothy hay, wheat concentrate—without the use of any chemical additive.—ED.

Soviet Origin Denied

TO THE EDITOR: REFERRING YOUR ISSUE OF JULY 5TH WE PROTEST STRONGLY AGAINST YOUR CONTENTION THAT A BELGIAN FIRM SOLD GSA 30,000 TONS AMMONIUM SULPHATE MADE BY LEUNA WORKS OF SOVIET L.G. STOP 30,000 TONS AMMONIUM SULPHATE AWARDED TO US BY GSA ARE EXCLUSIVELY OF BELGIAN ORIGIN AND MANUFACTURE STOP WE HANDLE ONLY NITROGENOUS PRODUCTS MADE BY OUR AFFILIATED WORKS IN BELGIUM FROM WHICH OUR EXPORT CAPACITY 700,000 TONS YEARLY STOP HANDLING SOVIET GOODS OR ANY MAKE OTHER THAN THAT OF OUR AFFILIATED BELGIAN WORKS IS OUT OF THE QUESTION FOR US STOP WE URGENTLY REQUEST IMMEDIATE RECTIFICATION.

EDMOND VOITURON

Director

Comptoir Belge de L'Azote Cobelaz
Brussels, Belgium

We're Entitled

TO THE EDITOR: With regard to the letter headed "Too Hot to Print" in your July 19 issue, as a chemist I do not consider that either the industry or the profession is being maligned when the public is warned of possible hazards from insecticides, whether new or old and whether natural or synthetic. As a consumer I feel that we are entitled to protective action by qualified individuals in the Food & Drug Administration or other agencies concerned.

Industry has capable scientific and legal advice—I would like to feel that the people as represented by their government has the same.

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OPINION

of the development of resistant strains of certain insects.

Resistant strains of human beings may unhappily be somewhat slower in developing. . .

A. J. KELLY
Burkart-Schier Chemical Co.
Chattanooga, Tenn.

We agree, of course, Reader Kelly, that we are all entitled to—and should strive to see that we get—protection from the hazards you mention. This is all we decry: irresponsible statements and wild exaggeration of facts made by pseudo-responsible "authorities" which damn all chemicals as evil, castigate our industry, undermine the faith of the public.—ED.

Fiber Predictions

TO THE EDITOR: . . . There's a marked discrepancy in predictions on synthetic fibers . . . In your July 5 issue you quote (in the Newsletter) American Cyanamid's C. W. Bendigo's prediction that 1970 output of synthetic fibers (not including rayon and acetate) would approach one billion pounds a year.

In your digest of the President's Material Policy Commission Report you quote the Commission as predicting 1975 production of synthetic fibers as four billion pounds . . .

The PMPC figure is Gustav Egloff's . . . other predictions for synthetic fibers are presented in other chapters of the report. As you have probably learned, there are four different chapters on chemicals written by four different industrial groups and the predictions in these four chapters differ greatly among themselves.

It is indeed unfortunate that the PMPC staff did not see fit to cross-check and attempt to reconcile the various predictions . . .

RAYMOND H. EWELL
Manager
Chemical Economics Service
Stanford Research Institute
Stanford, Cal.

Thanks, Reader Ewell. CW reports, of course, predictions it regards as significant, does not necessarily endorse the opinions of the predictors. That's why all such sources are carefully cited.—ED.

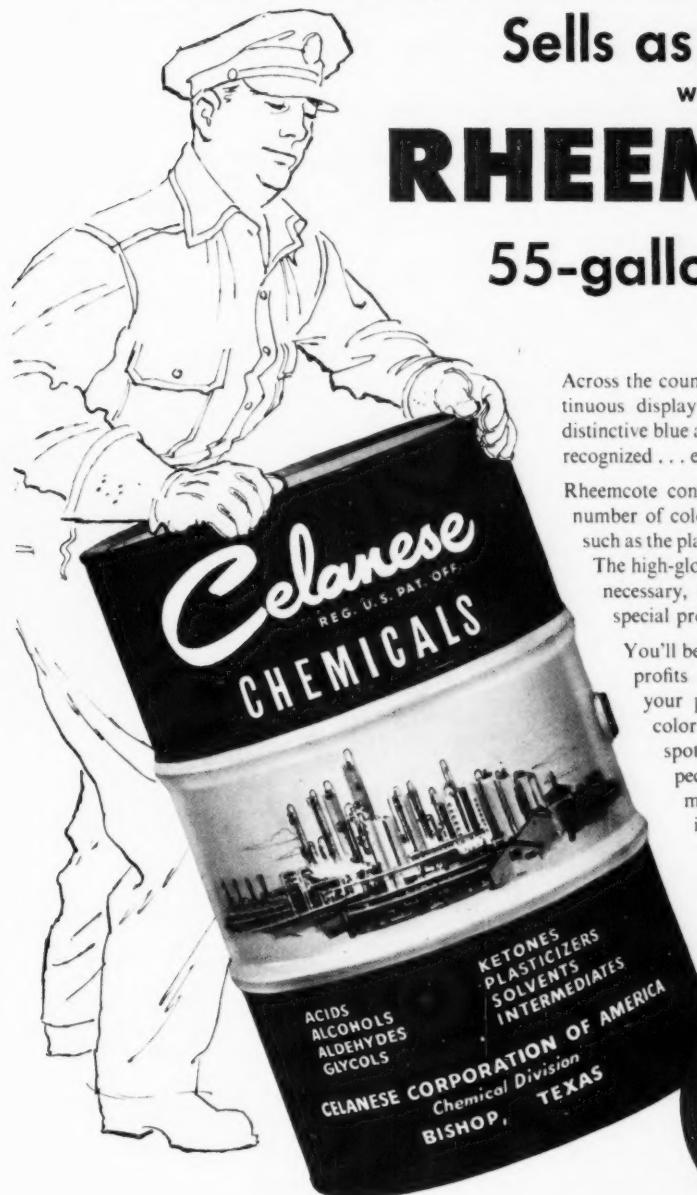
CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

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N APRIL 28, 1788, when Maryland formally entered the Union, the chromium chemical industry was unknown. In fact, it was not until 1798 that the heavy, dull black mineral named chromite was discovered in Russia.

But from 1827 on Maryland has continuously been first in the development of the chromium chemical industry. In that year Isaac Tyson, the founder of the American chrome industry, started mining chromite ore at the rich Reed Mine in Jarrettsville, Harford County, Maryland. This ore was processed abroad until 1845 when Mr. Tyson began the production of potassium bichromate not far from the present site of the world's largest chromium chemical plant.

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NEWSLETTER

Exclusive American rights to a unique nitrogen phosphate fertilizer process have been obtained by Stauffer Chemical Co. from Rumianca Societa per Azioni (Turin, Italy).

Features: It produces a pelleted material that may be bagged and shipped without the aging period usually required for superphosphate. Using the standard raw materials—phosphate rock, sulfuric acid, ammonia—the process is continuous, permits variation of nitrogen content between 5% and 10%, of phosphate content, between 12% and 25%. About the same proportion of phosphate is water-soluble as in single superphosphate.

Stauffer will build a plant, but it hasn't decided where or when. Other producers may also use the process under a sublicense.

Tennessee Valley Authority's new process for the same kind of product will also be commercialized.

Associated Cooperatives, Inc., has purchased part of an existing nitrate plant at Sheffield, Ala., will refurbish it at a cost of about \$2 million to produce 60,000 tons a year of 14-14-14 fertilizer.

TVA's process, so far tried only on pilot-plant scale, uses phosphate rock, nitric acid, potash, ammonia and phosphoric acid.

Further process news concerns one of the pioneer chemical areas—fluorine. Pennsalt is pushing chlorine trifluoride out of the experimental stage, is upping capacity at its Natrona, Pa., plant.

While the material is a fluorinating agent for organic compounds, more significant in accounting for increased output is the hint that it may be a superior oxidizing agent in rocket fuels.

In a lighter—and greener—vein is the news that research is fairly far along on the use of chlorophyll in textiles, to keep the wearer smelling fresh and sweet.

A new fiber, but not for clothing, is the news this week from The Carborundum Co. Called "Fiberfrax," it's made in an electric furnace from alumina, sand and certain modifying agents. It stands up at temperatures over 2,300 F. Target markets: chemical filters, high-temperature insulation, fireproof and electrical papers.

Available now only in bulk (2 lb. per cu. ft.), the material will eventually be made in felted blankets, bonded batts, tape and paper. Carborundum can turn out 30 tons a month in its pilot unit.

A new Maryland law stops water pollution before it starts. Calling for reports when discharge of waste is contemplated, and for a certificate of approval for construction of waste treatment works, the new regulation gives the state legal power to prevent discharges that exceed limits allowed by existing laws.

Until now a new industry could locate in Maryland, build and operate a plant, discharge waste to a stream and create measurable pollution before the state could take action.

NEWSLETTER

Shortly after several firms moved to boost titanium output (see p. 55), NPA met with industry and government representatives to spell out even more extensive plans for the strategic metal.

Titanium output this year will be about 2,000 tons; it's expected to rise 2,000 tons a year for the next three years—i.e., 8,000 tons by 1955. But while potential demand is high, actual demand—as represented by firm orders—falls short of that necessary to keep plants running.

Recommendations: (1) The military should buy all current output at current prices—to stimulate technical progress, encourage production and thus eventually lower the price. (2) NPA should set up an Industry Advisory Committee.

But at the same time NPA is eager to set up a new industry advisory committee, its Chemical Division is writing to members of its committees to see what they think their future activities should be.

Lifting of chemical controls has left them with little to do; and some of the committees haven't met more than once since they were organized a year or so ago.

Du Pont appears to have scored at least one point in the final decrees in the antitrust suit against it and Imperial Chemical Industries.

Late last week Judge Sylvester Ryan granted most of the "remedies" asked by the government, including an order that the defendants give up joint control of Canadian Industries Ltd., Duperial-Argentina and Duperial-Brazil.

Other provisions: They must license their U.S. patents (including nylon) to all comers; make technical manuals available; permit licensees to ship products to any part of the world regardless of whether the defendants hold foreign patents.

But government lawyers are upset about Judge Ryan's provision for "reciprocal licensing," as requested by Du Pont, which means that if a company wants to license a Du Pont patent, it must be prepared to license one of its patents if Du Pont wants it. Too much bargaining power, say antitrust attorneys.

Good news for researchers is the fact that patent applications are now getting faster action by the U.S. Patent Office.

The backlog of applications is down to 98,000—lowest in six years. Last year the backlog was 110,000, and three years ago it was over 200,000. Patents are now being issued in a little over a year after applications are filed.

U.S. Public Health Service will continue to push fluoridation of municipal water supplies despite the Delaney committee's warning that such encouragement may be premature—and despite Rep. Miller's complaint that USPHS was going beyond the scope of its duties (CW, July 19).

Using its authority to promote public health, USPHS will recommend fluoridation "unless it hears from Congress."

Rambunctious Glenn McCarthy is countering Dresser Industries \$1 million suit (see p. 15) with a suit for \$11 million or more against Dresser, claiming the plant it built for him never operated properly.

Fighting mad, McCarthy claims that he turned down a Dresser proposal (which Dresser denies making) to settle his indebtedness, and the suit is timed to hinder his offering of stock in Glenn McCarthy, Inc.

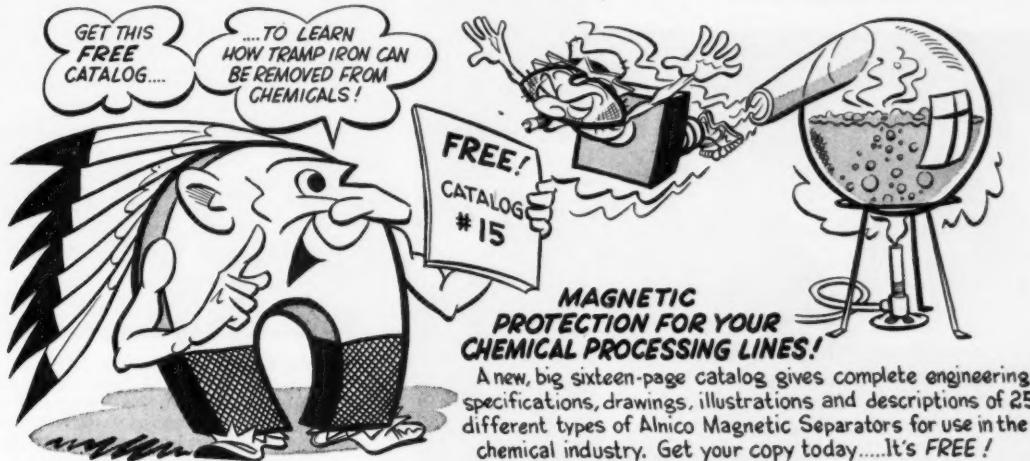
. . . The Editors

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52H

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BUSINESS & INDUSTRY

New Fiber, More Fiber

This week, there were indications that a synthetic fiber which has seen much of its development in Europe would be the entry of Allied Chemical into the fiber field.

The company's certificate of necessity for nylon (*CW Newsletter*, July 26) will not be used to produce the "normal" filament, but instead, a caprolactam-based nylon.*

As yet, Allied's plans are nebulous. In development work on polyamides at its Morristown, N. J., labs, it says it has developed a process of its own that might allow it to bypass other patents on the material. In any case, it hasn't yet licensed anybody's patents.

Plant location has not been determined, and, of course, might not be until evaluation of the fiber is complete and top management gives its go-ahead. However, Allied told DPA that it wanted to build a plant capable of producing 20 million pounds of fiber per year. DPA, in turn, approved tax amortization covering \$23.2 million worth of facilities.

Fiber Qualities: Work on polyamides indicates that nylon 6 has a melting point considerably below that of nylon 66. Other qualities are roughly comparable.

Allied isn't saying whether it has gotten around such a disadvantage; but it does point out that, in any case, there is a considerable market for low-temperature uses. (A price advantage would also help.)

If Allied goes ahead with the project on a commercial scale, it would be the third U. S. polyamide producer. On the basis of DPA's plans for production of 270 million pounds of nylon per year by 1956, the breakdown would be like this: Du Pont, 200 million; Chemstrand, 50 million, and Allied, 20 million.

A complicating factor is the court order in the Du Pont-ICI anti-trust case, which requires compulsory licensing of nylon patents. However, the present head-start of Du Pont, and to a lesser extent, of Chemstrand, might be too great.

Allied, however, could logically switch to nylon 66 production.

* The material has been known as Perlon L (for lactam) and as nylon 6, since its monomer contains six carbon atoms. The Du Pont-ICI filament is nylon 66, since it is a copolymer of two six-carbon materials.

Larger View: But certainly, the over-all synthetic picture includes a good deal more than nylons—even if DPA didn't want to realize it (*CW*, July 12). At the same time that it granted Allied its certificate and gave Du Pont three others for nylon expansion, it tried to brush off the list of 27 other fiber expansion applications. DPA's reason: It can give tax aid for expansion purposes only when the material in question has direct defense uses. The military—says DPA—has made no black-and-white commitments that would make other fibers eligible.

Included out are Du Pont's a-building of \$36.1 million Orlon facilities at Camden, S. C., (and Waynesboro, Va.) and its \$51.7 million Dacron plant at Kingston, N.C., (and Gibbstown, N.J., and Seaford, Del.).

Union Carbide was turned down on its \$1.3 million pilot plant at Charleston, W. Va., and its projected \$30 million Draper, N.C. plant.

Two other turndowns came on applications from American Cyanamid (\$40.6 million) and Tennessee Eastman (\$18 million) for plants to make their still-experimental acrylic fibers.

But in number at least, DPA's turn-downs on rayon and acetate applications took the prize:

Company, location	Value (\$ Million)
RAYON CORD:	
American Enka, Lowland, Tenn.	1.9
American Viscose, Front Royal, Va.	30.6
Du Pont, Buffalo, N.Y.	1.9
Industrial Rayon, Painesville & Cleveland, O., Los Angeles, Cal.	50.9
National Auto Fibre, Riverbank, Cal.	13.2
RAYON OR ACETATE STAPLE:	
American Bemberg, Elizabethton, Tenn.	5.0
American Viscose, Nitro, W. Va., Roanoke, Va.	54.7
Celanese, Rock Hill, S.C.	20.3
Courtalds, Salco, Ala.	24.0
Delaware Rayon, New Castle, Del.	2.8
Harford-Rayon, Rocky Hill, Conn.	3.4
Industrial Rayon, Covington, Va.	30.0
Tennessee Eastman, Kingsport, Tenn.	14.5

Unrequited IOU's

The contractor who in 1949 built the McCarthy Chemical Co. plant in Winnie, Texas, says that he is getting tired of waiting for multimillionaire Glenn H. McCarthy to pay for the \$836,289 job.

Dresser Industries, Inc., of Dallas,

has sued the opulent Texas oil man for \$1 million, including a 10% penalty and 4% interest. Dresser says that McCarthy, who also owns Houston's fabulous Shamrock Hotel, had signed 12 promissory notes for \$69,690 each, payable monthly beginning Oct. 1, 1949, and that none of these payments has been made to date.

At present, the chemical plant in Winnie is being operated by Metropolitan Life Insurance Co., to which McCarthy reportedly owes \$20 million.

One for the Coast

First polyethylene plant on the West Coast will be Carbide and Carbon Chemicals' \$36 million installation in Los Angeles County, Cal. Capacity will be 50-60 million pounds of the plastic and 5-10 million pounds of ethylene glycol.

Exact location of the new plant has not yet been made public. DPA certificates of necessity for the project have been issued, however, and design and engineering work are under way. First on the Pacific Coast to manufacture both polyethylene and ethylene glycol, the plant will supply that area as well as the Mountain states with these materials.

The glycol, of course, is made from ethylene oxide. Presumably Carbide will sell any oxide in excess of its West Coast glycol requirements, or use it otherwise in its own operations.

The new plant is Carbide's third for polyethylene; the others are located at South Charleston, W. Va., and Texas City, Tex. Only other producer of the plastic, Du Pont, makes it at its Sabine River plant in Texas.

T-Day For Du Pont

If all the defendants in the Government's anti-trust suit against the Du Ponds come to Chicago for the trial starting Nov. 18, it'll be as much of a family reunion as was their company's 150th anniversary celebration last month.

This week, the Government's complaint was amended by adding the names of 115 individuals and one corporation (Wilmington Trust Co.) to the original list of defendants: Pierre, Irene and the late Lammot du Pont as individuals and E. I. du Pont de Nemours & Co., General Motors, U.S. Rubber, Christiana Securities, and

BUSINESS & INDUSTRY

Delaware Realty & Investment Co.

No Blanket Complaint: At first, the Justice Department's Antitrust Division sought to aim this suit at all persons related to the principal defendants by blood or marriage and who hold stock in the corporations specified. District Judge Walter J. La Buy said no dice, the Government would have to name its defendants or forget about them.

So now Prosecutor Willis Hotchkiss, Midwest chief of the Antitrust Division, trotted out the names. Some are little children; some are of advanced age (Pierre du Pont is 83). Unavailingly, defense attorneys argued that expanding the list of defendants would cause delay and would be prejudicial to the interests of those already named.

"Purchasing Preference": Formal charge against the Wilmington clan is that the stockholding pattern among them is conducive to purchasing preferences and tends to shut out competitors, in violation of the Sherman Act.

Here's the way Hotchkiss alleges this system works: The 118 individuals own the majority of voting stock in Wilmington Trust, which holds stock in the other firms. Delaware Realty stock is owned by the families of the eight brothers and sister of Pierre du Pont. That company and the first three defendants own 90% of stock in Christiana Securities, which in turn owns controlling stock of the Du Pont company.

The Du Pont company owns 23% of G. M. stock, and the Government feels that's equivalent to control. As individuals, the Du Ponts own 17% of U.S. Rubber's outstanding common stock.

Mutual Aid Circle: Now, says the Justice Department, with that set-up, G. M. favors Du Pont and U.S. Rubber in buying supplies for making autos; U.S. Rubber and Du Pont buy automotive equipment from G. M.; G. M. turns its chemical discoveries over to Du Pont for exploitation; and so on and so forth, in cozy circles.

This is what the Government wants the court to order. That the Du Pont company and members of the family must sell their stock in G. M. and U.S. Rubber, and be enjoined from re-acquiring stock and control in those concerns.

The defense probably will contend that a U.S. citizen is entitled to own stock, whether his name is du Pont or Jones, and that to limit ownership is a step toward socialism. It's a case that may shake up a big segment of American industry.



COUNTRY-WIDE PHENOMENON: Chemical industry grows like teen-ager.*

Skimming the Hurdles

Building contractors, bolstered by trained organizations and free-wheeling financing, are hopping handily over all hurdles in keeping the chemical expansion program moving on schedule.

Although new chemical construction jobs are being projected at a record rate, contractors have managed to cut their backlog of this kind of work by about 10% in first half of 1952.

Despite obstacles like inflated prices, material shortages and labor difficulties, the chemical industry in the United States is well on the road toward achieving its 1952 expansion goal—boosting capacity by 12%.

And the reason that these hurdles are being surmounted with routine nonchalance in this 1.5 billion-dollar construction program is that the industry is being served by a corps of resourceful contractors with two big assets:

- Since 1940, these contractors have built up large, versatile organizations that will bid on a million-dollar contract as casually as your newsstand dealer sells you an evening paper.

- Because of the importance of most big chemical construction projects to national defense, the govern-

ment has been granting financial help (tax relief and loans) that enables a contractor to put emphasis on speed rather than on the economy that would be required in more competitive circumstances.

Thick and Fast: Even though chemical construction work is being planned and contracted for at a faster rate than ever before (except during the early years of World War II, when much of its expansion was of a temporary nature), the building contractors have more than kept pace with demands.

That chemical construction job orders have been coming along thick and fast is shown by these figures from

* Invading a marshland realm of mud and mosquitoes, these surveyors are staking out a channel for a new construction job for Freeport Sulphur Co. near one of the mouths of the Mississippi River at Garden Island Bay, La.

BUSINESS & INDUSTRY

Defense Production Administration: In the first 14 months (through last year) DPA certificates of necessity were issued, the chemical industry's share stood at about \$1.4 billion; and during the first six months of this year, that figure swelled by another \$1 billion.

Nevertheless, contractors have been catching up on this prodigious heap of work. A nation-wide CHEMICAL WEEK survey indicates that the leading contractors have trimmed their backlog of chemical construction orders by about 10% since Jan. 1. Obviously, however, the backlog are still of formidable size.

Regional Variation: It appears that contractors in the East have been catching up on their job orders faster than those in other parts of the country—or maybe, to look at it a different way, more chemical construction is being undertaken in other sections.

Two contractors who do much of their work in the New York-New Jersey area estimated that their chemical backlog had shrunk by 30% and 25%, respectively, since January. California and New England builders are finishing old jobs as fast as new ones come along. Contractors on the Texas Gulf Coast calculated they had reduced their backlog by just 3% in the six-month period. On the other hand, a big building company in Chicago contentedly reported that its chemical work-load has increased by 15%.

One large firm in New York, specializing in plants for fertilizer chemicals and acids, completed 23 projects and started 43 during the first half of this year. It claims to have more sulfuric acid and fertilizer-ammonia plants on order now than at any time since 1940.

Gestation Period: Many contractors agree that there's an average waiting

time of about six months between the time a contract is awarded and the date when construction is started. They cite numerous reasons for this time lag:

One Texas contractor blames government red tape for about two months of the hold-up on a good-sized job, and he complains that this situation is worse than it was a year ago. A Chicago builder remarks that a five-month interval for engineering and procurement has been in vogue for so long that it now seems normal. Another expert in this field figures that when a chemical job includes complete design, procurement and construction, there's a lapse of about a year and a half from letting the contract to getting the plant in production.

In the case of a chemical job for which the contract was signed June 1, these are the expected delays: waiting for DPA certificate, completion of design, obtaining construction materials, legal steps to secure deeds to plant site, building access roads to property, building railroad spurs, and collecting heavy earth-moving equipment.

Adolescent Growth: Notwithstanding these irksome delays, the chemical industry's physical being has been growing like a teen-age country boy this year. This has been a country-wide phenomenon, as seen in this survey.

In South Acton, Mass., a contractor completed Dewey & Almy's 254-acre, \$3 million dollar plant for manufacture of diocetyl and dibutyl phthalates. Clear across the country in Ventura, Calif., work began on a multi-million-dollar plant for production of ammonia by Shell Chemical Corp.

Linden, N. J., became the site of a \$1.5 million pilot plant for American

Cyanamid, and Union Carbide awarded a multi-million-dollar contract for a new plant at Seadrift, Texas. Pennsylvania Salt is putting up \$8 million for a Calvert City, Ky., plant that will make hydrogen fluoride, sulfuric acid, chlorine and lye. North Chicago, Ill., is the home of Abbott Laboratories' new \$3 million chemical plant. Garfield Chemical and Stauffer are collaborating on a phosphate fertilizer plant at Salt Lake City.

Future's Outlook: All through the 55-day steel strike this summer, chemical construction work proceeded pretty much on schedule. This was because contractors have formed habits of thrift and frugality in saving steel from one job to the next. Now, many a contractor's cache of structural steel has been depleted, and steel production still isn't back to capacity.

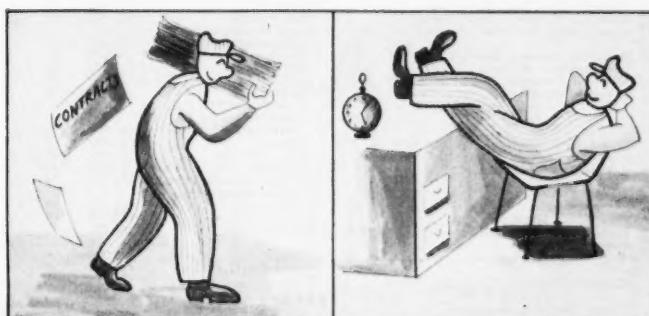
Except for procurement of steel, the waiting period on chemical construction jobs has been shortening, avers the spokesman of a plant building-and-equipping company whose income for the first six months of this year was nearly \$77 million (compared to \$47 million for the first half of 1951). Now, he figures, it'll take a month or so to find out how rapidly the steel makers can refill their pipelines.

But with contracting companies geared to handle some of the largest and fastest building jobs since the six-day creation of the universe, it appears that a temporary shortage of steel will be the only serious deterrent to another near-miracle in chemical expansion during the last six months of 1952.

LEGAL

Stingy With Patents: Seven American companies^{*} are among the pharmaceutical concerns that reportedly have become highly irked at the Italian Central Patent Office's grudging reluctance to issue patents on their products. One thing that adds to these companies' wrath is the belief that while the Patent Office is sitting on their patent applications, Italian firms are selling those drugs—possibly with slightly changed formulas—and are refusing to pay royalties. A Swiss company, J. R. Geigy A. G. Chimische Fabriken, asked for a DDT patent in 1939, finally got it in 1951 after twice appealing to Italy's highest court. Parke, Davis applied for a patent on chloramphenicol in 1948 and still is twiddling its thumbs waiting for the Patent Office to act. Only con-

CHEMICAL CONSTRUCTION SITUATION AT A GLANCE



"Obviously, construction order backlog are still of formidable size."

"Six-month time lag on starting construction now seems normal."

* Abbott Laboratories, Ciba, American Cyanamid, Eli Lilly, Commercial Solvents, Merck, Parke Davis.

solution for the non-Italian drug companies, according to one spokesman: "Italians who steal our formulas can't export the products, because we have patents in most other countries and can stop the Italian shipments at port customs offices."

Double Jeopardy

Companies working on defense contracts for Uncle Sam can count on facing one Congressional inspection after another, particularly if the job is one that can be described with headline-happy words like "billion-dollar H-bomb project."

Last fall, the contractor (Du Pont) and the 12 AFL labor unions working on the Atomic Energy Commission's Savannah River Project "passed inspection" as the "watchdog" committee on defense production made its rounds of that South Carolina site. Now, these same parties find themselves blistered in print by a report of another Congressional unit.

Agencies Also Hit: This report, published this week by the House special subcommittee on labor relations, also sears the AEC and the Department of Labor. These agencies are branded as accomplices in plot to side-track Taft-Hartley in hiring practices.

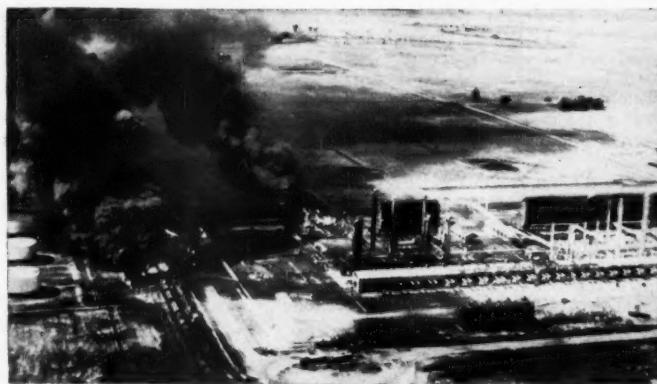
To the question as to whether there's an emergency situation that would justify short-circuiting the Taft-Hartley law, the subcommittee answers with a vigorous "No." It recognizes the project's importance to national safety and the need to complete the job at the earliest possible moment, but nevertheless:

"...decryes the utter disregard of the basic rights of our citizens to seek and obtain employment in whatever field they may be qualified."

Solons Are Piqued: Apparently miffed by what they called "a very thinly veiled arrogance" on the part of Du Pont officials, committee members headed by Rep. Barden (D., N.C.) drew up a 10 count bill of particulars attacking the project's principals.

Among the committee's allegations: a preferential hiring system was instituted and tolerated; company notified unions of number of employees needed; company refused offers of state employment service to help find workers; company kept AEC officials "ignorant or impotent"; union membership was made a prerequisite for employment; workers could not obtain jobs unless recommended by unions; and unions "indicated their gratitude to Du Pont for its cooperation."

Du Pont Replies: Equally emphatic is Du Pont's denial of these charges. Chief Engineer Granville M. Read de-



Fire in Quake's Wake

HEAVY SHOCKS from the earthquake that shook most of California recently set off this fire at the Paloma refinery eight miles south of Bakersfield. The refinery, a cycling plant operated by Western Gulf Oil but owned by six oil companies, suffered damages roughly estimated at \$1 mil-

lion. It is now completely shut down, and it is not known when it will be on stream again turning out black oil, butane, propane, natural gasoline and debutanized condensate for its owners. There was no other major damage to chemical process plants resulting from the quake.

clarifies that his company:

- Has no agreement to use AFL members exclusively.
- Hires on the basis of qualification, medical examination, and security.
- Does not require employees to maintain union membership.
- Keeps no records on union membership of employees.
- Pays wages at rates set by Government.

"We heartily subscribe to the belief that no one spending tax funds is above investigation by Congress," Read concludes, "providing the investigations are objective and do not overlap." He says the plant is taking shape rapidly and that labor efficiency continues at a high level.

Profiting by what has happened in South Carolina, defense plant managers are saving all their "Welcome, Congressmen" signs and ribbons—they probably can be used again soon.

CURRENT LIST OF DPA-CERTIFIED FACILITIES

Company, Location	Product	Amount Certified	% Certified
Kelley Island Lime & Transport, Presque Isle County, Mich.	Limestone	\$8,300,000	20
Allied Chemical & Dye, Kingston, W. Va.	Metallurgical coke	5,420,000	50
Air Reduction, Chicago, Ill.			
Seaboard Oil of Del., Park County, Wyo.	Liquid oxygen, argon, nitrogen	4,374,170	50
Columbian Carbon, Conroe, Texas	Sulfur	904,800	70
Union Carbide & Carbon, Hastings, W. Va.	Carbon black	395,000	50
Skelly Oil, Stephens County, Okla.	Liquid hydrocarbon concentrates	2,105,000	60
Dow Chemical, Pittsburgh, Calif.	Isobutane	167,000	90
American Cyanamid, Willow Island, W. Va.	Methionine	1,502,700	40
Koppers, Follansbee, W. Va.	Melamine	2,474,000	45
Collio Chemicals, Lake County, Ohio	Naphthalene	363,000	50
Hooker Electrochemical, Niagara Falls, N. Y.	n-Trichloromethyl-thiotetrahydro-phthalimide	800,000	45
Linde Air Products, Tonawanda, N. Y.	Lindane	411,700	45
Hercules Powder, Parlin, N. J.	Silane, silicones	751,000	60
Monsanto Chemical, Texas City, Texas	Chemicals	1,420,000	40
Davison Chemical, Cincinnati	Cellulose acetate flake	2,024,179	45
Union Oil, Wilmington, Calif.	Cellulose acetate molding powder	409,412	45
	Cellulose acetate	123,168	60
Diamond Alkali, Houston, Texas	Phenolic resins	3,346,700	45
	Nitrocellulose	535,000	55
	Nitrocellulose products	781,260	55
	Vinyl resins	3,681,250	45
	Petroleum cracking catalysts	600,000	65
	Ammonia	5,000,000	45
	Methylene chloride	1,119,000	60

(Correction of Previous Listing)



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Turning collars on heads and trays is everyday work for this machine. Collars turned are uniform and the trays are kept round and flat. Precision turning of this type greatly expedites assembling and fitting the trays into the tower shell sections. In the finished tower it assures level trays for maximum efficiency and trouble-free operation.



A specially-built bar-bending machine can cold form bars up to two inches by four inches into circles thirty inches in diameter and up. These circles are used for reinforcing and stiffening rings, backing flanges, lap collars and for internal tray support rings. Rings or flanges formed on this machine are held to a close tolerance for roundness and flatness.

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SCOUTMASTER of Troop 1, Beacon, N.Y., is spare-time activity of Floyd Philgreen, here huddled over map with (l. to r.)

Don Williams, Albert Green and Art Eischens. At The Texas Co. Beacon Labs, he's a group leader.

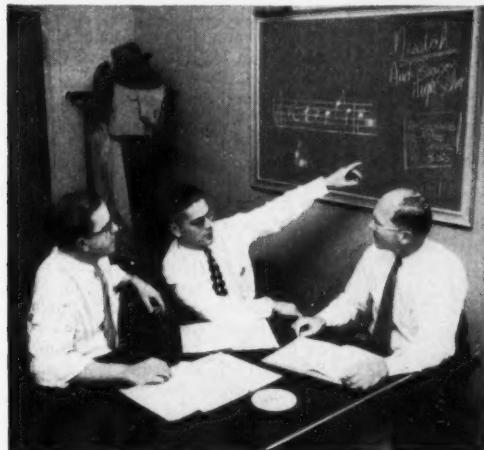
Scientists Make Good Neighbors Too

No enterprise can be completely successful without public sanction. That's one business fact that most companies are becoming more aware of today. On

the local level, that sanction can be measured by community relations: Are they good, bad or indifferent?

Relations between the Beacon Lab-

oratories of The Texas Co. at Beacon, N. Y. and the Hudson River Valley communities that are "home" to Texaco men there are unquestionably good;



SINGERS AND OFFICERS of local choral group are (l. to r.) research chemists Charlie Holden, Bob Conary and J. R. Morris.



RAY FIETSAM (r.), asst. supt. at Beacon Labs, talks fellow Kiwanian, City Judge Ben Roosa, into speaking date.

BUSINESS & INDUSTRY



MAYOR OF FISHKILL, N.Y., G. W. (Bill) Luther greets town clerk, Mrs. Myrtle Maynard. Bill is a Texaco engineer.



BANK PRESIDENT S. A. Robinson discusses Texaco employee savings plan with Beacon Savings trustee, Kiwanian Fietsam.



MANY AT BEACON LABS, like chemist Bob VanVleck (r.), Sunday School Superintendent, work with Rev. Bruce Stearns (l.) in affairs of The Fishkill Methodist Church.

. . . Lab Workers

CW went looking for the "why," came back with these pictures that show how chemists, engineers and physicists get along because they *are* the community.

But you will find in these pictures no blueprint of what they are doing. That's because the Beacon atmosphere has developed from a point of view rather than a formalized program.

Good Catches: The Beacon attitude has matured from one of suspicion on the part of the local citizens, historically concerned with manual trades, when Texaco scientists first moved in 20 years ago. These newcomers were college men, perhaps better educated than they, and many with a research bent were somewhat diffident.

"The first break came when mothers realized that all the nice young college boys added up to a lot of eligible males," an old-time Dutchess County official recalls.

Whatever the causes, the community and laboratory did get together; the stereotype of the ivory scientist has been swept away. The chemist, the physicist, the engineer . . . they are merely the next door neighbor.

The "scientist" is the fellow who helps keep the volunteer fire department up to par, who teaches map reading to youngsters at Boy Scout meetings, who helps plot the year's program for the county choral group. He serves on the school board, teaches Sunday School, is a bank trustee, is a member of service clubs—does the hundred and one tasks (some far removed from the spotlight) that keep a community alive.

This philosophy of "good citizenship"—a disposition to pitch in which



SCHOOL ADDITION occupies Beacon Labs vet (and education board member) Ross Cobb (l.) and contractor Ernest Ciferrri.



TALKING EQUIPMENT are Frank Morgan (r.), Texaco engineer who heads Chelsea Fire Co., and railroader Sandy Sanderson.

Take Boss's Cue

characterizes Beacon—stems from the Superintendent of Beacon Laboratories, Carl E. Cummings. Cummings is a veteran Texaco engineer.

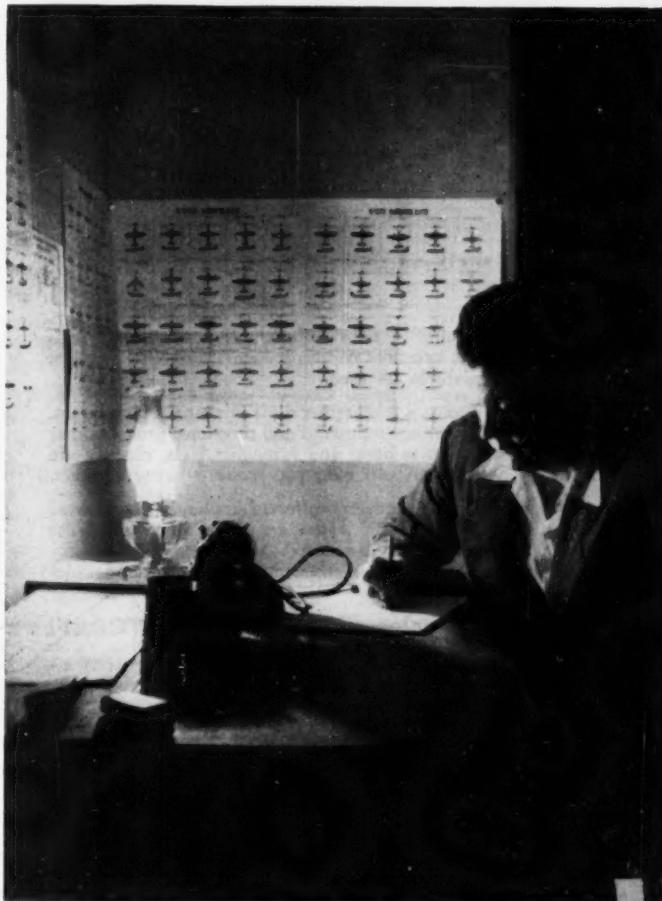
He was called to active duty in 1941, served in the Petrol, Oil and Lubricants services, and when returned to inactive status with rank of colonel in 1945, he was named superintendent at Beacon.

Cummings' concern with the nation's preparedness is typical of his attitude toward public service. Instead of putting his responsibilities in moth balls with his uniform, he determined that the lessons learned in procurement and distribution of petroleum products need not be lost. He helped gather a group of ex-POL men to recommend changes in supply methods to the Joint Chiefs of Staff; and he continues active in reserve affairs affecting petroleum.

It's the same way at Beacon. Many otherwise reticent research men have been encouraged by his example and word to participate in public affairs and run for office. This is the way he sees it:

"A well-rounded man who accepts his community responsibilities has a breadth of outlook which increases his personal pleasures and is bound to give him valuable perspective in his research work. . . . One of the first things we do in orienting a young chap just out of school is to emphasize that if he is to enjoy life in the community, he must help out. Neighborliness takes a little effort."

And the "little effort" is paying off in the friendly attitude toward Texaco in Beacon.



AIR-SPOTTER J. Perry Dilworth does stint in tiny room in an old farm shed. Perry, supervisor of his local observer group, is project leader in the Grease Dept. at Beacon.

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mineral oil-fatty oil mixtures
with ADOL Fatty Alcohols?*



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ADOLS are available in several different grades, both saturated and unsaturated. The solid ADOLS are white, amorphous flakes . . . liquid ADOLS are light colored. All ADOLS are pure fatty alcohols; can be sulfated, sulfonated, esterified, nitrated, chlorinated or phosphated.

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FOREIGN

Japanese government has reduced allocation of foreign exchange available to purchase phosphate rock so that imports for the six months ending in September won't total over 240,000 tons. The figure for the previous period was 450,000 tons.

No Delaney Down Under? The Australian Government is opposed to the creation of a special investigating Royal Commission to study proprietary drugs and so-called secret remedies. Reason: It's unconstitutional.

• South Australia has added cortisone to the "poison list" of drugs. It is now available only by special prescription from a qualified doctor. The Central Board of Health has also objected to misleading use of word "cortisone" on labels and in ads for certain patent medicines.

Canadian Dollars in Israel: Canadian capital to the extent of 100,000 Israeli pounds (about \$100,000) has now been added to British, American, South African and Israeli money invested in Fertilizers & Chemicals, Ltd. of Haifa. Palestine Economic Corp. of Canada Ltd., through its wholly-owned subsidiary, Canada Israeli Development Corp., made the investment.

Fertilizers & Chemicals, a company formed by Palestine Potash, Ltd., is just completing a sulfuric acid plant, has an extensive development plan under way.

Pfizer in Brazil: Chas. Pfizer has established a manufacturing subsidiary, Pfizer Inter-American, S.A., to process and distribute antibiotics and other pharmaceuticals in Brazil. Plant will be in Sao Paulo; company headquarters in Rio de Janeiro.

Fursland Laboratories, which previously distributed Pfizer products in Brazil, collaborated in setting up the new company.

LABOR

New Labor Contracts: Wage increases of 9¢ and 10¢ an hour for the 400 employees at Socony-Vacuum's refinery in Buffalo, N. Y., have been approved by WSB, retroactive to April 28, boosting the plant wage rate average to \$2.08 . . . At Orange, Texas, Du Pont is granting a 5¢ hourly wage increase to employees at the Sabine River Works plant, with shift differentials going up from 5¢ to 6¢ for second shift and from 10¢ to 12¢ for third shift—all subject to WSB approval . . . A general wage boost of 15¢ an hour, plus higher shift

differentials, has ended a 70-day strike at Phillips Petroleum's Hillyard refinery near Spokane, Wash. . . . Diamond Match Co. and United Paperworkers of America (CIO) have agreed on a general wage hike of 6½¢ an hour for employees at Ogdensburg, N. Y., whose minimum wage rate now goes up to \$1.20 an hour . . . The new two-year contract between Vanadium Corp. of America and District 50, United Mine Workers, provides for a 5¢ hourly pay rise, higher shift differentials, and liberalized vacation and insurance benefits.

Strikes & Lock-out: Two strikes and an alleged lock-out are the principal battle lines of Oil Workers International Union (CIO) this summer. OWIU says its strikers against Carbide & Carbon at Whiting, Ind., have been out for four months "and they're planning to hold out for many more months." The union says the company refuses to discuss most of the issues. . . . OWIU members at Great Falls, Mont., have been striking for more than three months against Phillips Petroleum, and the union says the refinery there will rust to the ground before the men accept the company's "miserable offer." . . . OWIU says its members have been locked out by Frontier Refining Co. at Cheyenne, Wyo. The union had served a strike notice on the company after Frontier sought to "broaden its prerogatives."

Atom Workers Sue: Work on the billion-dollar atomic energy plant at Paducah, Ky., is back to normal after last month's strike, but the labor picture still is stormy with an insurgent workers' group suing the International Union of Operating Engineers (AFL) for \$3½ million. The rebels claim the parent union denied self-government to the local group, called strikes without consent of the local group, collected excessive fees and dues without providing benefits. The union also faces court action on a charge of failing to charter a local union at Paducah, as required by state law.

Spray Runs Amuck

Chemical plants in the Dallas-Fort Worth vicinity have been absolved of responsibility for the "mystery fumes" that killed thousands of acres of cotton north of Dallas last month.

The blame has been pinned on an irresponsible prairie breeze that sprang up during a weed-killing operation in the Trinity River levee district about nine miles away. An herbicide was being sprayed from airplanes to pre-

vent regrowth of willow trees and heavy brush between the levees.

Unexpected high winds caught up some of the spray and carried it much farther than officials had anticipated. The fumes drifted for about 40 miles, causing damage ranging from 10% to 100% in fields where cotton plants were fruiting. Hardest hit were upland fields; the spray apparently passed over the valleys.

Full extent of damage is being totted up by the Texas Department of Agriculture, but cotton farmers say they won't know how much cotton they lost until ginning time this fall. At any rate, it's another heavy blow for Collin County, which lost most of its corn crop on account of a recent draught.

KEY CHANGES . . .

R. F. Brown: To assistant sales manager, Industrial Chemicals Division, Carbide and Carbon Chemicals Co., New York, N.Y.

John E. Rooney, Jr.: To sales manager, glycerine department, Armour and Co., Chicago, Ill.

Otway W. Rash: To sales development manager, Monsanto Chemical Co.'s Merchandising Division, St. Louis, Mo.

D. S. Dinsmoor: To board of directors, American Potash & Chemical Corp., Los Angeles, Calif.

Homer E. Stavely: To director of pharmaceutical research, Commercial Solvents Corp., New York, N.Y.

G. Walter LaBorie: To sales manager, Lever Division, Lever Bros. Co., New York, N.Y.

Matthew A. Taylor: To manager of sales operations, Ethyl Corp., New York, N.Y.

Paul W. Kinney: To director of product information, J. T. Baker Chemical Co., Phillipsburg, N.J.

Joseph P. Madden: To vice-president and director, Caldwell Chemical Co., Inc., New York, N.Y.

Marshall S. Byers: To manager of safety, Naval Stores Department, Hercules Powder Co., Wilmington, Del.

A. G. Wolf, C. O. Stephens, and H. W. Strickland: To vice-presidents, Texas Gulf Sulphur Co., Houston, Tex.

John B. Trotter: To manager of aroclor and special chemicals sales, Monsanto Chemical Co.'s Phosphate Division, St. Louis, Mo.

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Tar and asphalt, for example, are effectively defoamed during processing as well as during application by concentrations of Antifoam A as low as 4 parts in 10 million.

Ten ounces of Antifoam A added to a 40,000 gallon batch of crystallizing sodium bromide prevented foaming in that batch and in the next 21 batches as well. Here the effective concentration works out to about 1 part in 10 million.

If cost, contamination, or full use of process equipment are prime considerations in your operations, try Antifoam A. Practically odorless, tasteless and non-toxic, Antifoam A is safe, fast and by far the most economical and versatile defoaming agent on the market.

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DOW CORNING CORPORATION
Midland, Michigan



A Hog-Belt Social . . .



. . . Catches "Ag" Customers

(Turn page for story)

A CONTINUED STORY BY ONE OF AMERICA'S OLDEST GLASS MANUFACTURERS

The Case of the Acid Carboy

by Gayner

CHAPTER FIVE

There are many reasons why the Gayner acid carboy is still the favorite "king-sized" glass package of the chemical and process industries:

- It is extremely versatile in use, carrying corrosive, "hard-to-handle" liquids as easily as it carries fruit juices, beverages and oils. And the contents are always **VISIBLE!**
- It isn't limited to carrying the **SAME** product every time. **GLASS** can be cleaned faster and more thoroughly than any other medium—and **DIFFERENT** fluids can be shipped in it each time, if desired.
- Highly resistant to chemical attack, Gayner glass carboys will not pit, corrode, or absorb water or chemicals.
- Fully annealed—like the finest of laboratory glassware—Gayner glass carboys possess amazing strength and serviceability.
- Light in weight, they assure low shipping and return costs.

If you are packaging fine or heavy chemicals, dangerous liquids, oils, beverages, juices or drug products, get the facts first on Gayner carboys—the MCA standard 13-gallon bottle known and used from coast to coast for almost 60 years.

Write today for illustrated brochure, prices and shipping details on Gayner carboy bottles, boxes and cartons.

IMMEDIATE DELIVERY ON ALL TYPES



TIME-PROVEN CARBOY POINTS

- Gayner glass is fully annealed. Maximum shock-resistance for safety.
- Uniform, heavy walls. Strong, durable, greatest serviceability.
- Easy to clean because it's **GLASS**. Re-usable for same or different liquids.
- Resistant to chemical attack. No pores or pits to absorb water or chemicals.
- Bottle held firmly by cork wedges. All corners of box securely cushioned.
- Light in weight—low return costs.
- Box is clear, sturdy, seasoned white pine. Bottle easy to install; convenient to handle and store.
- Approved by Bureau of Explosives. MCA Standard 13-gallon carboy bottles.

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GLASS WORKS

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FOR CHEMICALS, DRUGS, OILS, WINES, JUICES..

DISTRIBUTION . . .



A PFIZER SALESMAN gives his pitch on the advantages of Terralac. While the men listen . . .

. . . A Hog-Belt Social (continued)

Nature tells a sow how to feed her little pigs, but who is going to tell a farmer how to proceed when he decides to experiment with chemistry's latest encroachment on nature's preserve: artificial sow's milk? As manufacturer of the product, Brooklyn's Chas. Pfizer & Co. is rising to the responsibility, is conducting a vigorous education campaign through the hog-growing states. The scenes on this and the previous page show how Pfizer is going about its task.

But the producer isn't being entirely altruistic—it also has a selling job to do. The synthetic milk has to buck strong competition, not only from the sows themselves (who have been at this game a lot longer than Pfizer), but also from such products as Commercial Solvents' "Bacigro," a pelleted antibiotic containing bacitracin. When these pellets are implanted behind a baby pig's ear,* it is claimed that

* By using a specially developed implanter called a "Bacinator."

growth patterns are achieved similar to those experienced with Pfizer's Terralac.

Family Affair: Selling Terralac falls in the bailiwick of Pfizer's newly created Agricultural Sales Division, headed up by manager Jerry Thompson. Biggest gun in his selling arsenal is a grange-type meeting with hog-belt farmers, taking full advantage of the farmer's penchant for old-fashioned get-togethers. Hundreds of these gatherings have been held in eleven



THE FARMERS' WIVES prepare coffee in the kitchen . . .



SETTING THE STAGE for selling during the social hour.

Midwestern states during the last few months.

Usual procedure is for the Pfizer salesmen to team up with the local feed dealer. The latter does the actual selling of Terralac to the farmers, is usually glad to cooperate since he has other products which he can push at the same time. The dealer hires the meeting hall, pays for the mailings to the farm customers. Either the manufacturer or the dealer pays for advertisements in the local newspapers.

On the night of the party, as many as 40-50 farmers gather at the hall, usually with their wives and children in tow. The ladies retire to the kitchen and prepare the food while the men sit down for the educational program.

The farmers watch through two slide films which have a total running time of forty minutes. The first outlines the advantages of Terralac—its effect on the early growth of baby pigs, the economic benefits of lessened loss from "runts," a chance to beat the market with earlier finished hogs, thus taking advantage of higher prices.

The second film strip covers the technique of using synthetic sow's milk. It warns the farmers about some of the dangers which may befall a piglet raised away from its mother. These include a dousing in the Terralac trough and suffering from unaccustomed chills.

These slides are followed by a question-answer period ranging up to an hour. When the Pfizer salesman has answered all of the inquiries, the social hour begins. While the women serve the coffee and doughnuts, buttonholing of prospective customers in the audience hits its peak.

Often the dealer will give away door prizes as an added attraction to bring in a crowd, but the biggest bonus for Pfizer and the dealer alike is the careful registration of all the farmers as they arrive. This list of names provides a handy starting point for other selling programs in Pfizer's continuing sales effort on farm chemicals.

Elastic Approach

Silicone rubber compounding has been a mysterious art until now, especially for manufacturers of rubber products who heretofore could buy only fully formulated products from the silicone rubber makers.

But General Electric, one of the primary silicone producers, has decided to change this approach. Starting immediately, rubber molders and extruders can buy a raw silicone gum

B



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*when you want it promptly
...for your pharmaceuticals*

Michigan Chemical is a leading producer of mono-Bromobenzene . . . highly versatile intermediate in a wide range of pharmaceuticals. For a supply that meets your specifications and your shipping date, write, wire or call Michigan Chemical Corporation.

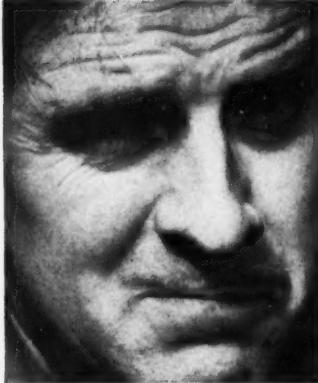


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***FRUSTROSITY** is that frustrated condition a man gets into when his problem is Viscosity Determination or Control and he hasn't asked BROOKFIELD.



(His business paper . . . of course)

Any man with business on his mind puts his mind on his business paper. **The Best Informed Men in your Field** find time to read . . . not just a page or two, but thoroughly. And regularly. It pays off in fresh approaches to tough problems, close touch with your market. Read every issue . . . editorials and advertising. Both are jamful of news and "how-to" that will keep you one of the **Best Informed Men in your Field**, too.

CHEMICAL WEEK

One of a series of ads prepared by
THE ASSOCIATED BUSINESS PUBLICATIONS



DISTRIBUTION . . .

which can be handled in their plants like other synthetic and natural elastomers.

The new product, identified as SE-76, is being produced at GE's newly expanded Waterford, N. Y., silicone plant. With the gum goes detailed suggestions for converting the polymer into finished compounds. The average user will be able to use the same processing machines he already has on hand.

No Eye on Tomorrow

Chemical salesmen, whose job it is to find homes for the freshest of new products which their industry turns out each year, now have some handy statistical evidence to prove their thesis that chemical selling is not all a bed of roses.

The figures are part of a report just completed by the Standard Factors Corp., a New York, Chicago, and Los Angeles commercial finance company. Since a large part of Standard Factors' business centers on credit-financing smaller manufacturing concerns, it decided to take a poll of its clients to determine how they tackled the critical task of incorporating new ideas and materials into their manufacturing operations.

The financiers figured that this would give a rough guide as to the growth potential and managerial health of the companies concerned.

The results were anything but encouraging. Using 1945-48 as the base period (since the material shortages of those years should have created an ideal atmosphere for the consideration of new or substitute products) and defining a small company as having 150 employees or less, Standard Factors found that the great bulk of the 726 sampled firms had virtually no planned procedure for the regular evaluation of alternate raw materials. Most of the fore-planning fell in the category of the company president's calling up his research director and saying, "We're out of zinc today, find me something else we can use tomorrow!"

By Guess, By Gosh: Only 3.3% of the companies reported any system for the digesting of incoming information, either from salesmen or from literature. In fact, only 13.4% of the total admitted they received any help at all from outside sources on developments in their fields. These credit their trade associations, suppliers, trade journals, and outside research laboratories as being their main providers of new product tips.

But what worried Standard Factors is that companies which neglected

new-product opportunities tended to fall behind their fellows. Either they were hit extra hard when shortages occurred or else they failed to bring out competitively equal products when the selling race stiffened. In several cases, a single company was caught in both traps. Hurriedly incorporated substitutes slowed down production during the good-selling days, and inadequate testing of the alternate materials ruined consumer acceptance—thus presenting an insurmountable hurdle when quality means sales.

All of this is a fairly familiar tale to chemical salesmen on the firing line, but many of them are hoping that at least a few of their customers will heed Standard Factors' message that open minds and open doors often spell the difference between success and failure.

Reverse Twist: In spite of a 10% gain on the total tonnage of imports entering the United States through the New York port area, the first half of 1952 registered a 23% decline, or a drop of \$23.5 million, in the customs receipts compared with the same period last year. This double-action shift apparently came from a heavy movement in favor of products which carry a low rate of duty—another indication of the current price-conscious attitude of American buyers.

Free Trading: Importers and exporters are invited to run a 7-line notice of their trade interests, without cost or obligation, in a publication distributed in 131 countries by the Dutch organization, Instituut voor Handels en Bedrijfsvoortlichting (Amsterdam). The magazine, "Trade Channel," is issued monthly.

Commercial Scale: Tennessee Eastman Co. is now in full-scale production of di-isobutyl phthalate. Claims for the material as a plasticizer for cellulose nitrate formulations are based on its apparent improvement of the nitrate film's low-temperature flexibility compared to products employing dibutyl phthalate.

Plateau Period: Bureau of the Census figures for May, 1952, exports show that industrial chemical shipments are holding their own at \$11.6 million, down only 2% from April. This compares to \$15.0 million for the previous month of May. These comparisons are also reflected in the statistics covering plastics, antibiotics, and fertilizers. Total exports for all commodities, however, are running 10% above the 1951 average.

Quick Facts for Future Profits

Check these workable
intermediates for use
in your product or
process.

BUTYRIC ACID • CH₃CH₂CH₂COOH

Esters of butyric acid are valuable flavoring and perfuming agents. Typical of the versatility of butyric acid in chemical synthesis is the production of propylthiouracil, an antithyroid compound, and butanefrin, a bronchodilator. Butyric acid is also employed commercially in a process for sweetening gasoline feed stocks. AVAILABLE IN TANK CARS.

2-ETHYLBUTYRIC ACID • (C₂H₅)₂CHCOOH

2-ethylbutyric acid is an intermediate in the preparation of the sedative Carbromal. A major use for this acid is in the manufacture of a plasticizer for polyvinyl butyral resins used in safety glass. Its esters are used in flavoring formulations. AVAILABLE IN TANK CARS.

2-ETHYLHEXOIC ACID • CH₃(CH₂)₃CH(C₂H₅)COOH

Metal salts of 2-ethylhexoic acid are widely used as paint and varnish driers. These driers are stable, high in metal content, light in color, and practically odorless. The aluminum soaps are excellent gelling agents for hydrocarbons. 2-Ethylhexoic acid is a solubilizing agent for "Copper-8" a mildew-proofing compound for tarpaulins, tents, and rope. The esters of 2-ethylhexoic acid with di-hydroxy compounds have become increasingly interesting as synthetic lubricants for low-temperature operating conditions and as plasticizers for vinyl resins and nitro-cellulose coatings. AVAILABLE IN TANK CARS.

Call on our representatives for help in applying these synthetic acids to your product and process problems.

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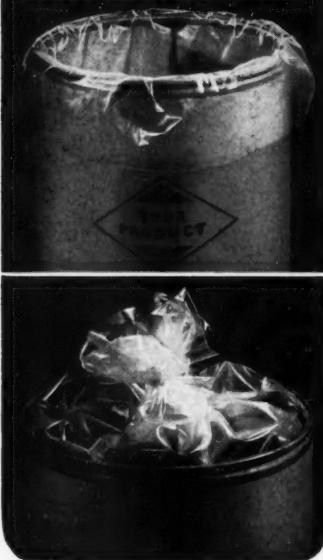
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OF PRODUCTS IN
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Practically any acid, alkaline or base chemical product that's packed in steel drums or fiber containers can now be shipped more safely and at lower costs with Kennedy polyethylene liners. Made of only the finest virgin material, these moisture-proof, chemically inert liners eliminate spoilage losses, protect the products, keep out contamination, assure complete product recovery at destination. Kennedy also makes case, drum and barrel liners of creped paper for dry or semi-solid chemicals. Both types are fabricated to specified dimensions for your particular requirements. Write, 'phone or wire for free samples. No obligation.



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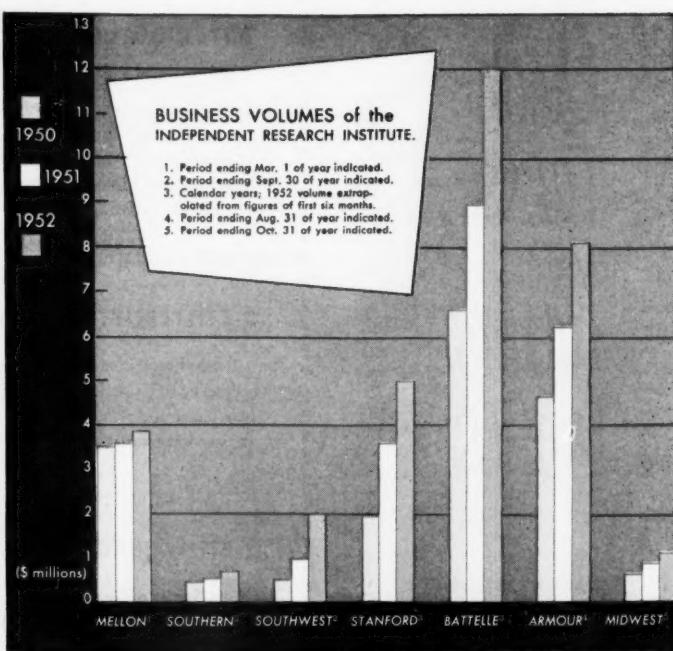
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Detroit CHICAGO LOS ANGELES

SAN FRANCISCO PORTLAND SEATTLE

RESEARCH



Riding the Crest

New highs in revenues highlight a continuing period of prosperity for the independent research institutes.

Here are their records for the past three years, their secrets of success and a hint of what's ahead.

The American research dollar may not go as far as it once did, but the number of them is spiraling higher by the year. Government and industry research budgets are at an all-time peak, likely to enjoy their exalted positions for some time to come. Riding the crest, and reflecting in large measure the magnitude of this research boom, are the independent research institutes.

Expanded facilities, new equipment and beefed-up staffs actively attest to the boom. But the institutes' fiscal ledgers tell the real story of how much and how fast. The page for 1952, now being written, tells a cheerful tale. With few exceptions, the latest income figures of the institutes show very striking gains over previous years:

Stanford Research Institute's 1952 income, estimated at \$1/2 million, is 40% over that of 1951, 150% over 1950's. Southern Research Institute (Birmingham, Ala.) expects to take in \$700,000 in fiscal 1952, a gain of

27% over 1951 and an estimated 40% over 1950. Southwest Research Institute (Houston, Tex.) foresees a total volume of \$2 million this fiscal year, double that of last year and four times the 1950 figure.

Expenditures at Mellon Institute (Pittsburgh, Pa.) for the fiscal year 1951-52 were \$3,835,314, a 5% increase over 1950-51 and an 8% boost over 1949-50. Battelle Institute (Columbus, O.) judges that its 1952 volume will touch \$12 million, a gain of 33% over last year and 82% over 1950. And rounding out the tally, Midwest Research Institute (Kansas City, Mo.) anticipates that its total volume of business for the fiscal year 1952 will be in the neighborhood of \$1,135,000, 28% more than in 1951, 85% higher than in 1950.

Mainly because of differences of

THERE'S A TOUCH OF TENNESSEE IN JERSEY PHARMACEUTICALS



Many of the new "miracle" drugs are made in New Jersey, a state widely known for its variety of manufacturing industries. Antibiotics are saving lives every day and Tennessee Products is proud to be furnishing aromatic chemicals that are used in manufacturing these drugs.

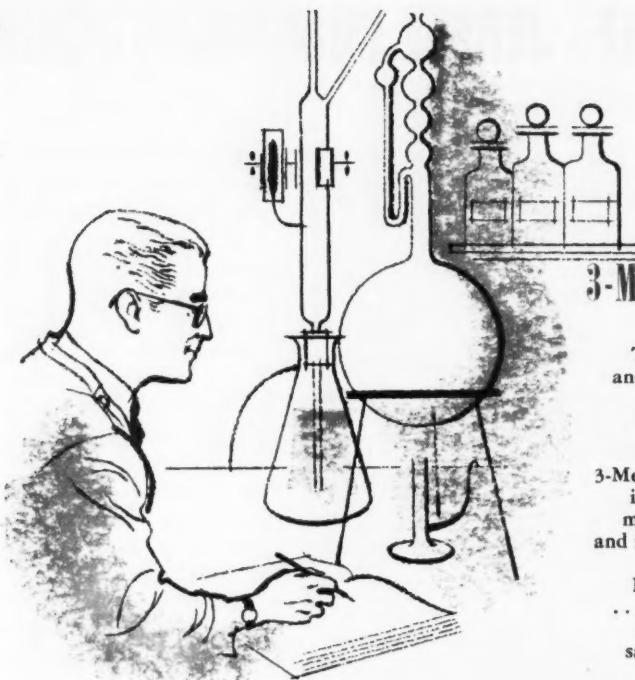
TENNESSEE also ships other chemicals to New Jersey manufacturers for many uses... Sodium Benzoate as a preservative, Benzaldehyde for flavorings and dyes, Acetic Acid for ester solvents and Benzoic Acid for alkyd resins. And in every state in the union you'll find TENNESSEE at work. That's why TENNESSEE is known from Coast to Coast as an industry serving all industry.



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PRODUCTS & CHEMICAL
Corporation

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Producers of: FUELS • METALLURGICAL
PRODUCTS • TENSULATE BUILDING
PRODUCTS • AROMATIC CHEMICALS
WOOD CHEMICALS • AGRICULTURAL
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look to
DOW
for
3-Methyl-1-phenyl-5-pyrazolone

Through years of research and experience, and extensive production facilities, Dow is able to provide you with chemical intermediates that you can depend upon for quality and uniformity.

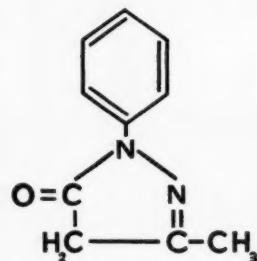
3-Methyl-1-phenyl-5-pyrazolone is an important chemical intermediate used in the manufacture of pyrazolone type dyestuffs and in the preparation of pharmaceutical chemicals. Also, another important Dow intermediate . . . Phenylhydrazine . . . is available for use in these same industries. Write DOW TODAY for a free sample for use in your specific applications.

3-Methyl-1-phenyl-5-pyrazolone

PROPERTIES

White to slightly yellow powder
Melting point (Meniscus) 128.9°C.
Molecular weight 174.2

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN



The Dow Chemical Company
Department FC 53
Midland, Michigan

Please send me an experimental sample of: 3-Methyl-1-phenyl-5-pyrazolone
 Phenylhydrazine

Name _____ Title _____
Company _____
Street _____
City _____ State _____

send for
experimental
sample

DOW

CHEMICALS

INDISPENSABLE TO INDUSTRY
AND AGRICULTURE

RESEARCH . . .

fiscal periods, these data are of limited value for inter-institute comparisons. Mellon's latest figure, for example, includes only the first two months of this year, while Battelle's—by extrapolation of Jan. to June figures—covers the entire current calendar year. Yet, despite their obvious limitation, the institutes' dollar volume statistics clearly define the trend, its rate in each case (see chart).

Dual Cause: Reasons for the mounting popularity of the institutes as an outlet for the nation's research dollar are, for the most part, easily understood. At the foundation of all particulars, however, two factors are unmistakable: industrial expansion and accelerated military development. Their relative impact on the broad picture is not easy to define. But it's clear that the latter seriously threatens to overshadow the former.

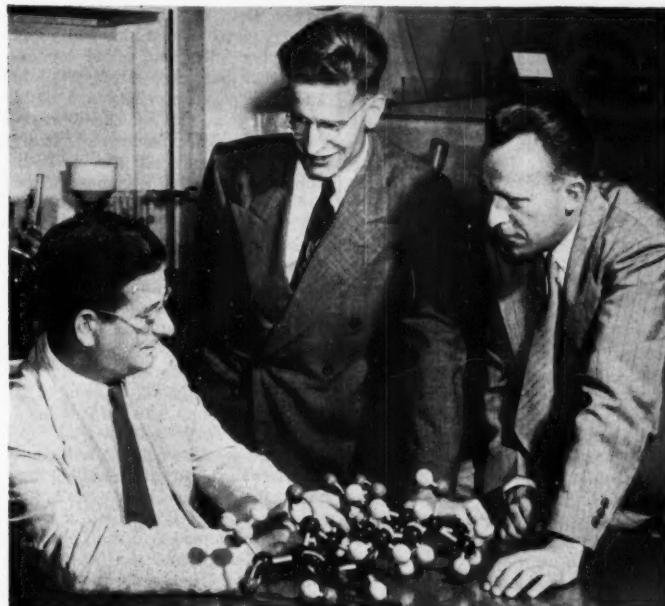
Armour provides a case in point. In 1950 the government was the source of about 50% of the Foundation's income. One year later the proportion shifted to 60%; it now stands

at 67%. At Stanford, revenue in 1951 and the first half of 1952 was evenly divided between government and industry work. This situation is quite a bit removed from the "ideal" 65% industry-35% government split Stanford strives for. The balance is shifted at Battelle—55% from industry, 45% from government.

The boom at the institutes could, with some justification, be called a creature of the war and the rearmament program. But it doesn't necessarily follow that a proportional bust will follow a slackening of the defense effort. As one Battelle spokesman observes: Government war research swells the over-all volume of activity, but in turn stimulates—as both world wars have shown—continued and expanded research by industry.

Not Shuffling: Moreover industry hasn't been shuffling its feet where research is concerned. At the risk of triteness, it might well be repeated that new products are vital to present-day competition.

Granted that research is booming—



Skeleton Out of the Closet

Two years' research has brought to light the chemical structure of Charles Pfizer and Company's antibiotic, terramycin. Examining a skeletal model of the complicated, 57-atom molecule are (*l. to r.*) Harvard University's Robert B. Woodward and Pfizer's F. A. Hochstein and Karl J. Brunings,

who directed the eight-chemist research team. The researchers claim that modified "terramycins" can now be made and that knowledge of the compound's molecular structure may help to explain the way molds synthesize complex materials for combating invading micro-organisms.



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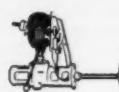
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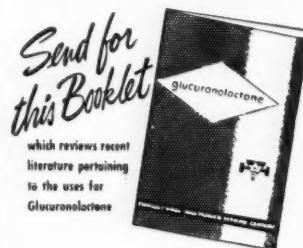
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RESEARCH . . .

but why at the institutes? There isn't any single overriding reason. The answer is to be found in the experiences of those who administer the institutes. According to Thomas W. Martin, chairman of Southern Research Institute: "Both industry and government have come . . . primarily for know-how not available within their own organizations. Our people, assigned to their work, have specialists in many fields available for consultation."

Martin goes on to say, "By using our know-how and facilities, industry and government avoid the necessity of making large capital expenditures and long-term obligations to additional scientific employees. And our work gains in objectivity and effectiveness by being isolated from short-term production problems."

Aid For the Small: Another aspect of the story is aired by Southwest Research Institute president, Harold Vagborg: "More and more small manufacturers and processors are utilizing industrial research as insurance against obsolescence. Not able to support elaborate research facilities, the small business is using the independent, non-profit organization which provides it with the needed equipment and the pooled experience of top-notch research people.

"Southwest, like other independent laboratories," says Vagborg, "employs a wide variety of specialists whose experience may be purchased on a part-time basis by small industrialists."

Freedom from the ever-present problems of the commercial organization is affirmed by Edward R. Weidlein, president of Mellon Institute, as a strong appeal of sponsored research. Weidlein claims that "appreciation by industry and government of the visible results of long-range, uninterrupted research in pure as well as applied sciences" is a strong underlying factor in his organization's growth.

Obviously, the secret of success varies—in large measure—with the individual institute and its particular qualifications for service. But success has been the rule. And its inevitable consequence has been expansion. Armour, for example, has doubled its staff over the past three years; Stanford has increased personnel from 425 in 1951 to a present 500.

Ominous Note: How long the boom will last is anybody's guess. A recent ominous note was struck by Congress in eliminating the Air Force's budget for fundamental research. But the feeling is that government research spending will continue at approximately the current rate for at least two more years. And although the inde-

pendent research people are quick to point up government's place in the scheme of things, they nevertheless believe that industry is probably a lot more solid and dependable a customer over the long haul.

Besides, full-throttle prosperity has given rise to more than a smattering of concern along with the general elation. Stanford Director J. E. Hobson is now aiming to hold the line (for the time being, at least) at the current income level. The fear of one Stanford spokesman is that if the six-year-old Institute grows up too fast, it will lose its "unique value as a barometer of industrial growth in the West."

Hot Atoms, Safe Drugs

Radioactive cobalt-60 has been found superior for sterilizing drugs by irradiation. According to Leonard Reiffel, supervisor of nuclear physics, and C. A. Stone, physicist, at Armour Research Foundation of Illinois Institute of Technology, cobalt-60 promises simpler sterilizing at high efficiency and low cost.

Current irradiation means, such as x-rays, beta rays, ultraviolet, high-energy electron bombardment, and radioactive slurry are either too expensive or don't do a satisfactory job. And heat, pressure or chemical methods have such harmful effects as reducing the effectiveness of many drugs, shortening shelf life, or both. Cobalt-60 sterilizing is claimed to be free of these undesirable features.

The new method is an outgrowth of an x-ray technique in which liquid bacteria cultures, in a double-walled plastic capsule, were bombarded with x-ray equivalent to cobalt-60 radiation. This amount of radiation was found to kill all bacteria.

In practice, it works like this: The irradiation equipment consists of a hole in the ground which is lead-lined and can be sealed with a lead cap. Cobalt-60 is placed in the hole in a predetermined pattern. Standing behind a concrete protective wall, the operator places the drug into a large plastic or aluminum ball. He then lowers the ball into the hole for a given period of time and subsequently removes the whole set-up by means of a small crane system.

Sisal Juice: According to the recent report of the Medical Research Council (London), investigations in Kenya have shown that hecogenin, used in manufacturing cortisone, can be cheaply and easily extracted from sisal juice. Hecogenin is claimed to be one of the most promising starting materials for cortisone manufacture.

BOOKS . . .

Introduction to the Study of Physical Chemistry, by Louis P. Hammett. McGraw-Hill Book Co., New York, N.Y.; 427 pp., \$6.00.

"This text considers physical chemistry as a method of obtaining and organizing information about the phenomena of nature . . . rather than as a description of what has been found out in the past." Some of the topics covered are thermochemistry, electrical conduction in solutions, and a discussion of quantum principles and the use of the Boltzmann equation.

Biochemical Preparations, Volume II, edited by E. G. Ball. John Wiley and Sons, Inc., New York, N.Y.; vii + 109 pp., \$3.00.

The principle, starting material procedure, properties, and methods of preparation of various biochemicals are the subjects of this book. Some of the chemicals discussed are oxyceasin, glutathione, and crystalline lactate dehydrogenase.

Principles and Methods of Chemical Analysis, by Harold F. Walton. Prentice-Hall Inc., New York 11, N.Y.; 420 pp., \$6.50.

A study of the fundamentals of modern non-instrumental analysis, with emphasis on basic physico-chemical principles, this book is written for the student with a knowledge of physical chemistry. Some of the subjects treated are gravimetric methods, separation processes, and volumetric or titrimetric methods. Uses of specific reagents and techniques and acid-base titration and points are also discussed.

MEETINGS . . .

Amer. Pharm. Assn., centennial meeting, Bellevue-Stratford Hotel, Philadelphia, Aug. 17-23.

Amer. Inst. of Elec. Engrs., general meeting, Phoenix, Ariz., Aug. 19-22.

Natl. Agricultural Chemicals Assn., annual meeting, Essex and Sussex Hotel, Spring Lake, N.J., Sept. 3-5.

Amer. Standards Assn., Museum of Science and Industry, Chicago, Sept. 8-10.

Instrument Soc. of Amer., conference and exhibit, Cleveland, Sept. 8-12.

National Chemical Exposition, Coliseum, Chicago, Sept. 9-13.

Natl. Petroleum Assn., annual meeting, Traymore Hotel, Atlantic City, Sept. 10-12.

Packaging Mach. Mfrs. Inst., annual meeting, Homestead Hotel, Hot Springs, Va., Sept. 11-14.

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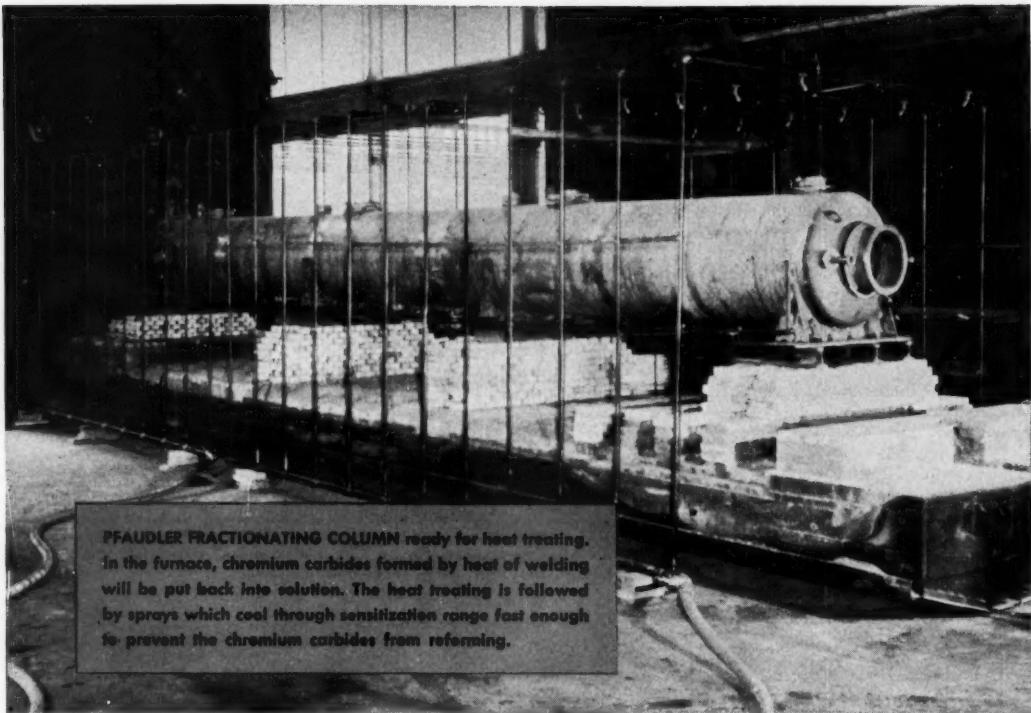
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SPECIALTIES . . .



SYNTHETIC SUDS: Will no soap, no ring, find consumer favor?

Rumble from Cincinnati

With a new synthetic detergent bar, Zest, Procter & Gamble hopes to drive a "synthetic wedge" in the \$130 million annual toilet soap bar business.

Not yet nationally available, and not the first bar of the synthetic sort on the market, it will be the first to receive a full-blown promotion by one of soap's Big Three.

Problems of cost, production and raw material availability have apparently been whipped; the problem now: Getting the public to accept it.

It's still in the test market stage, but it's scheduled for wing-ding promotion: Zest, Procter & Gamble's new synthetic detergent toilet bar (*CW Newsletter*, Aug. 2). With this latest product, P & G thinks it has sneaked a march on the rest of the soap makers, and hopes for an even larger share of the \$130 million bar soap business.

Pushed as a beauty bar that gets skin "cleaner, clearer, fresher than any toilet soap," and plugged for its "leave-no-ring" qualities, Zest is selling at a little higher price than competitive bars. P & G, leaving actual pricing up to individual retailers, says the price will run about 60% higher than soaps (it is reportedly available in some areas at two bars for 29¢), and adds that it should last roughly 40% longer than ordinary soap bars.

About composition of the new bar,

P & G is mum. Competitors are not agreed on it either; some say it is half soap, others that it is all synthetic. The bar checked by *CHEMICAL WEEK* was a completely synthetic, milled one.

Not the First: Zest is by no means the first synthetic bar on the market. Colgate-Palmolive-Peet has been selling its all-synthetic Vel Beauty Bar (of sulphated monoglycerides) for several years. It is priced at about a quarter per cake, and is available nationally in drugstores, though it hasn't been extensively pushed.

Another currently available is Foster Milburn Co.'s (Buffalo) Lowilla, an all-synthetic^{*} bar promoted exclusively

* Detergent is sodium lauryl sulfate, made by National Aniline division of Allied Chemical & Dye. The bar has a dextrin base, is acidified with lactic acid. Lowilla is also sold as a liquid concentrate for use as a shampoo and household detergent by soap-sensitive people.

ly to the medical profession. Lowilla sells for 75¢ per cake, generally on doctors' recommendation—it is designed for alkali-sensitive skins. Foster Milburn, a medical specialty house rather than a soap maker, figures the high cost could be halved if the bar were mass produced, but it isn't planning on that now.

The Armed Forces are buying a considerable quantity of detergent bars. They demand a bar that will lather freely in hard, cold water and in seawater, and detergent types fill the bill. Such formulations were originally worked out in the fat-short war years, when the previously used oils (coconut) became unavailable. A number of soapmakers, including P & G, have produced this type of soap bar for the government.

But Zest will be the first to be backed by a heavy advertising campaign. Lever Brothers is apparently without a competitive product, and Colgate hasn't indicated that it plans to step up promotion of its Vel bar.

Plus and Minus: Advantages of the synthetic bars: They lather easily and speedily in all sorts of water, don't leave bathtub rings, and last somewhat longer.

Stacked up against these pluses are several drawbacks that have kept the synthetic detergent bar off the general market till this time.

A prime consideration is one of cost. That P & G can offer a bar at only 60% above soap is considered remarkable by many soapmakers, since fairly recent government figures place the component cost of a detergent bar at about four times that of a comparable soap bar.

Consumer acceptance is another point. A neutral detergent bar lacks the slippery feel inherent in ordinary soap, because of its slight alkalinity. In fact, many detergent formulations leave a sort of stickiness or tackiness on the hands after washing, something the public finds hardly attractive.

Another problem makers of synthetic detergent bars face is producing a bar that won't soften or slush on the washstand, or if unused, won't crack and split on shelves.

Still more difficulties arise in the actual manufacture of the bar. Ordinary soap making equipment doesn't operate well with synthetic components. Detergents don't soften like soaps under heat and pressure; stick to the mill rollers or won't extrude properly from the plodders (machines used to force out the basic bar stock).

But P & G claims to have licked most of these production problems.

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SPECIALTIES

J. M. Brod, P & G chemist heading the Zest project, admits that raw materials are expensive and hard to get, and that special machinery is required for making and mixing the components. Ordinary bar making equipment can be used, he says; the problem now lies in getting the consumer to demand Zest.

Recipe Resume: Although Procter & Gamble won't say what's in its bar ("We've been working on this project 20 years . . . That represents a lot of effort and money and we can't give the secrets away . . .") many detergent bar formulations have come to light in recent years.

Typical of the types of bars that combine soap with detergents is one developed by General Aniline and Film Corp. It contains about 47% tallow soap, 20% dodecylbenzene sulfonate (Sorapon SF), 20% sodium alkyl naphthalene sulfonate (Nekal A), and 10% diethyl ester of sulfosuccinic acid (Aerosol AY), plus a little carboxymethylcellulose and perfume. It was designed to meet government specifications.

A bar with no soap in it might be typified by formulations developed by Atlantic Refining Co. These employ small percentages (8-10%) of lecithin to cut down tackiness, corn starch for hardening, and talc to improve resistance to slushing. Ultrawet alkylarylsulfonates are the detergents used.

Huckster's Job: Though Zest's success is up to the public now that the production problems appear to have been solved, it's also up to the advertising men to win public acceptance.

Already the agency handling P & G talks of plugging Zest in expanded radio and television spots. No one, though, seems to know when Zest will go on the air.

At any rate, from top to bottom, through chemical, advertising, and executive divisions, P & G seems agreed on one point: This detergent bar will be as revolutionary among toilet soaps as packaged synthetics have been in the laundry soap field.

Call for Insecticides

Sale of liquid insecticides and aerosol bug-killers is zooming in California. Reason: The state's health department has warned that encephalitis* may become epidemic unless the virus-bearing mosquitoes are controlled.

In two areas in particular, the San Joaquin and Sacramento Valleys,

* Lethargic encephalitis is a disease characterized by inflammation of the brain. It is sometimes termed "sleepy-sickness," and is not to be confused with "sleeping-sickness," or trypanosomiasis, transmitted by the Tsetse fly.

the danger seems to be greatest, and merchants in the valley communities report record turnover of insect poisons and dispensers.

The campaign is being waged principally against adult Culex tarsalis mosquitoes. Dr. Wilton L. Halverson, state director of public health, has called on control agencies and householders to eliminate this disease carrier.

The householders are urged to eradicate possible breeding sources around their homes, and to kill insects within their homes with hand sprays and aerosol units.

Summer Peak: July, August, and September show the highest incidence of cases, Halverson says. And this year several factors have caused the epidemic threat:

- A wet year has produced numerous breeding spots in the river bottom land, where additional water has been spread to replenish underground water supplies.

- A cool early summer, followed by sharply rising temperatures, has drawn hordes of adult mosquitoes into populated areas.

- Susceptibility of the valley residents is likely to be high; because there have been only a few cases in recent years, resistance to encephalitis, which builds up naturally when disease incidence is high, has been generally lowered.

Dr. Halverson points out that there is no known immunization to encephalitis. In mild cases, headache, stiff neck and back, and drowsiness are the symptoms; in severe cases, high fever, sleepiness, and occasional convulsions are characteristic.

Spreading It Thin

Underplayed in the publicity on soil conditioners, but not overlooked by the farmer has been the high cost of treating any extensive acreage. Now American Cyanamid agronomists have come up with a shallow, crop-row treatment that may bring the conditioners within the farmer's reach. Essentially, the plan is to apply the soil conditioner only to the narrow strip where the plants will actually grow. It seems particularly feasible for lightly rooted truck garden crops. Where 200 lbs. of the wettable flake was required, roughly a tenth of that will treat strips, tests at Cyanamid's labs show.

The development is part of American Cyanamid's effort to promote its Aeritol to the farmer. A step in that direction was its recent introduction of 20- and 40-lb. packages for farm use.

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SPECIALTIES

Originally reported in CW as being sold directly to the farmer, these larger quantities of Aerotil will be distributed through Cyanamid's regular agricultural product outlets. In addition, Aerotil will be retailed under various brand names* to home gardeners.

In contrast to the program for soil conditioner use proposed by some companies—apply the conditioner to a depth of six inches—Cyanamid's pushing the shallow (about half-to-one-inch) treatment, to be repeated for several growing seasons.

The best time to apply the conditioners, Cyanamid believes, is in the spring, before any planting is done, since the more porous soil aids emergence of the young plants.

Hormones and Hot Springs: U.S. District Attorney R. S. Wilson has filed a petition in the Federal Court at Hot Springs, Ark., asking condemnation of a sex hormone product of the Yale Pharmacal Co. (Hot Springs), called

* Among the firms packaging Aerotil: California Spray Chemical Corp., Doggett and Peil Co., E. I. du Pont de Nemours and Co., Inc., Niagara Chemical Div. Food Machinery Corp., Nott Mfg. Co., Pacific Guano Co.

Testex. The petition claims misbranding of the drugs, and violations of the Federal Food, Drug, and Cosmetic Act.

Bleach Featured: John Wiley Jones Co., (Caledonia, N.Y.) has leased a building and one-acre tract in Charlotte, N.C. for manufacture of industrial bleaches and the distribution of chlorine in tanks.

Jobber Aids: Oil Specialties & Refining Co., Brooklyn, N.Y., is now offering what it terms a Field Service plan to help its jobbers in selecting the proper wax for individual jobs.

New Quarters: Dixie Disinfectant Co. (Dallas, Tex.) has just purchased a 6,000 sq. ft. one-story building in Dallas, plans to move its sanitary supply business to the new location.

PICTURES IN THIS ISSUE:

Cover (top) and pp 21; 22 & 23 — Lionel Crawford, McGraw Hill; Cover (bottom) — Cleanliness Bureau; p. 17 — Peggy Rice, McGraw Hill; p. 18 — Wide World; p. 39 — Sy Karson, McGraw Hill; p. 49 — Philip Gendreau Photo.



Locust War Moves On

AT LOCUST WAR headquarters, the Great Iraq Desert, leaders from three nations draw up plans to halt the insect plague. American-supplied Aldrin, along with British- and Russian-provided BHC, is the chief weapon in the fight (CW, June 7). Above, insect control experts (l-r, Leonard Jamieson-Ellis, of the British

Locust Control; W. B. Mabee, U. S. Point Four director; Keith Anderson, pilot; J. S. Hewitt, also of the Desert Locust Control; Shia Achmed, Iraq director of Plant Protection; Dr. L. Rohrbaugh, Point Four director in Iraq; Dr. Dmitri Georges, Agricultural Supervisor of Basra) chart battle plans.

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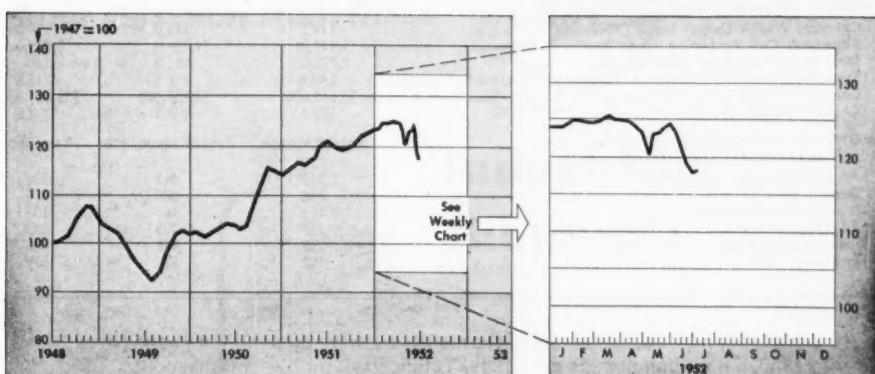


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MARKETS



CW Index of Chemical Output—Basis: Total Man Hours Worked in Selected Chemical Industries

MARKET LETTER

With the steel strike out of the way, coaltar chemicals consumers may figure their troubles, if any, are about to clear away as far as getting basic chemicals are concerned. But while the steel industry is slowly getting up off its knees, there'll be just a slight pause until a new opponent moves into the other corner.

John L. Lewis now replaces Phil Murray and coal miners are now bidding for wage increases. Lewis, ostensibly aiming his first blow at the Bituminous Coal Operators Association, has as his target the steel leaders whom Murray just battled. Steel owns, operates a large part of the coal-producing industry represented by the Association.

And the chemical process industries will be hurt a lot more now and later, if idle cokeovens result from prolonged negotiations with the miners. The reason: While the steel strike did not have as pronounced an effect as expected on coaltar markets—because many of these chemicals were on the softish side—CPI business prospects are brighter for the last half of 1952 than they were in the doldrums of the first six months.

Whether business will be any better for processors of linseed meal and other flaxseed feed products, now that the Government has finally come through with new price ceilings, is still a question.

The new OPS order boosts ceiling \$6.8/ton, raises linseed meal (protein content, 32%) price to \$78/ton, f.o.b. Minneapolis. The industry had been looking for more.

On the other hand, soybean meal processors—who have been pleading for a ceiling price hike since last May—must still wait until OPS makes up its mind.

Meanwhile, prices for mixed soymeal are quoted at \$92-93/ton in the East, \$91-92/ton in the West—with demand lively.

Most chemical producers have been complaining about imports, despite one-worlders' arguments that two-way trade is vitally necessary to the "free-world" economy.

Latest U.S. Tariff Commission report of imports of coaltar products will only add fuel to the fire. It points out that in 1951 imports under

MARKET LETTER

WEEKLY BUSINESS INDICATORS

	Latest Week	Preceding Week	Year Ago
Chemical Week's Output Index (1947=100)	119.3	119.0	119.0
Bituminous Coal Production (Daily Average, 1000 tons)	1,117.0	1,104.0	1,691.0
Steel Ingot Production (thousand tons)	1,737.0	891.0	
Stock Price Index of 14 Chemical Companies (Standard & Poor's Corp.)	249.8	250.5	246.6
Chemical Process Industries Construction Awards (Eng. News-Record)	\$8,414,000	\$3,423,000	\$25,885,000
Chemical Week's Wholesale Price Index (1947=100)	103.1	103.1	107.5

MONTHLY INDICATORS—PRODUCTION (Index 1935-1939=100)

	Latest Month	Preceding Month	Year Ago
All Manufacturing and Mining	203	211	221
Durable Manufactures	248	277	274
Non-durable Manufactures	185	181	197
All Chemical Products	297	293	302
Industrial Chemicals	557	558	548
By-product Coke	102	175	179

paragraph 27 (chiefly coal tar intermediates) were up 3 million pounds over 1950, 4.8 million pounds over 1949. Totals stack up like this:

Year	Million pounds	Foreign invoice value
1949	3.7	\$779,000
1950	5.5	1,600,000
1951	8.5	2,200,000

Most important chemicals last year, in terms of quantity: Naphthalene (refined), 3.4 million pounds, principally from Germany, Japan, the Netherlands, Belgium; aniline, 1 million pounds, all from Canada and the United Kingdom.

Coke-oven ammonium sulfate consumers can look for a few shipments to roll their way this week, but the pressure-easing will be slight. Chances are it will be another two weeks before furnaces begin hitting "normal" output.

The fertilizer will remain near the top of the "tight" chemicals list at least for the current fertilizer year (July, 1952-June, 1953). The reason: Even synthetic sulfate production can't make up the amount lost by the coke-oven shutdowns.

The fertilizer year beginning July 1, 1954, is what DPA had in mind when it recently set up new production targets for potash and phosphate rock. By then potash output, says DPA, should be 2 million short tons (K_2O)—600 thousand short tons over Jan., 1951.

The phosphate rock production goal, 5 million long tons (as P_2O_5), is a 1.5 million tons boost over 1950-1951's 3.5 million.

Midwest sulfuric acid plants are all set to go on stream again. Demand from reopened steel mills will be the trigger to start the flow of the acid—and the first calls are expected this week. When the strike began many sulfuric plants filled storage facilities then shut down for repairs.

Some of the equipment was in dire need of attention, had been running continuously for nearly two years. Repairs, of course, were completed long before the strike was over, but demand wasn't too great—so the plants stayed down.

SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending August 4, 1952

UP

	Change	New Price		Change	New Price
Linseed meal, 36%, bulk, midwest mills, ton	\$7.00	\$78.00	Shellac, superfine, 10-lb. lots b	\$.01	\$.29

DOWN

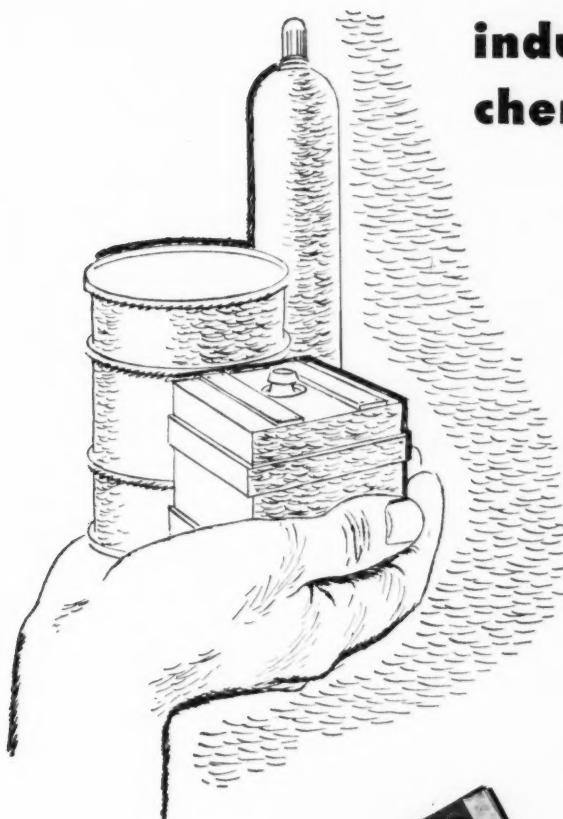
Allethrin, 100% drms., frt. alld.	10.50	32.00
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All prices per pound unless quantity is stated

make your selection from these



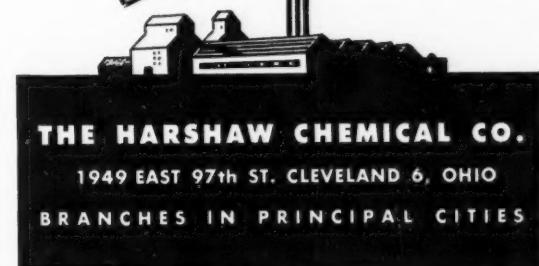
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M A R K E T S



MORE PAINTING: Idle hands wield paint brushes, help boost sales.

Paints Perk Up

Paint sales climb, say manufacturers, and the usual seasonal upswing is not the only reason for increasing business.

Strikes, plant shutdowns contribute to the steady rise from February's \$106.4 million to May's \$126.8 million sales.

At the peak of the steel strike nearly 2 million U. S. workers were idle. Some were steelworkers; more were employed in steel-starved industries. A look at an allied chemical process industry—paint—gives a good indication of what many of this army of temporarily unemployed Americans were doing in their "spare" time.

Paint sales—both inside and outside paint—usually spurt in areas where labor stoppages occur or are felt to any great degree. And not a few paint manufacturers are inclined to attribute part of the recent upsurge of paint sales to a lot of "home sprucing-up."

Some makers, too, consider employees' summer vacation periods as an added shot in the paint sales arm. While in many plants maintenance men are busy during these shutdown weeks repairing equipment, wielding paint brushes, fixing up in general, the non-seashore-mountain vacationers are doing the same around the house.

Down, Up: Proof of the pudding that these two factors provided a paint-sales fillip: Sales, generally, for the first four months of the year were about 8-9% off from last year's com-

parable period; in March of this year, however, paint sellers first began to see business perk up. They point to the continuing rise in 1952's pattern of total sales (includes retail, industrial) since February compared to the erratic rise, fall in the same months of 1951.

	1952	1951
January	\$113,400,000	\$128,102,000
February	106,400,000	117,025,000
March	110,900,000	132,257,000
April	125,100,000	122,925,000

Total first

4 months \$455,800,000 \$500,309,000

Although '52 shows an 8.8% drop, some paint makers are not too concerned, say last year is not to be considered a "normal" year. Reason: Scare buying, induced by fear of paint shortages, caused many fluctuations in sales.

On the other hand, what brought some delight to paint producers is this: April '52 was the first month in which sales topped a comparable month in 1951.

During May of this year total paint sales climbed higher than April's,

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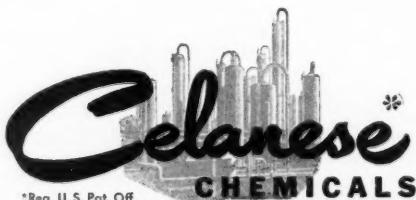
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*Reg. U. S. Pat. Off.

MARKETS

reached \$126,800,000—pretty close to May, 1951's impressive \$128,081,000. And by last week at least one major paint company was describing its sales as "humming right along."

Biggest hum, of course, is in the field of the comparatively new "rubber" paints. (Most of these are based on styrene-butadiene latices, some are plasticized styrene.) While pin-point production figures are not available, a "good deal more than half" of the interior paint sales of major companies are latex-based, according to one estimate.

In March, retail paint sales totalled about \$69,300,000. By the time the steel strike began (April 29), workers throughout the country had helped send retail paint sales zooming to \$80,700,000. And with the additional incentive of coming vacations (June-July), amateur—for the most part—redecorators were plunking down nearly a million and a half dollars more for paint in May than they did in April. Retail sales for May were \$82,100,000.

And it's not hard to find reasons why latex paints are leading in the interior paints field (some 20 million gallons sold in 1951). Home paint users agree with manufacturers' claims on the attributes of the "rubberized" paints: freedom from odor; ease of application; rapid drying; freedom from flashing; good alkali, acid resistance; washability.

There were squawks from professional painters in the beginning when it looked as if these new paints were developing a nation of paint-it-yourselfers (CW, Aug. 25, '51). But by

this week most of the bellowing had subsided. Maker of one of the largest selling latex-based paints told CW: "This development has improved the business of the paint contractor by stimulating interest in painting and home decorating. We doubt if the professional painter has ever been as busy as he is today."

Close Call: But the paint industry as a whole feels everything isn't rosy yet. Most manufacturers see August as the "critical" month. Reason: Steel container shortages. Can inventories have been eaten up and paint makers don't expect steel to flow to them for at least three-four weeks. If there is as large a supply of tinplate, as reported, in once-struck steel plants, paint producers may get through this month, breathe easier.

But if the strike had lasted any longer it would have conjured up some unpleasant visions of steel-substitute materials for containers. These makeshift "cans" (e.g., fiber walls, metal tops and bottoms) when used during previous steel shortages were not completely satisfactory.

Brighter Side: In addition to rising sales, all paint manufacturers are happy about another phase of paint making—getting the raw materials. They find these plentiful, no problem—and holding at fairly stable prices, no unusual fluctuations.

In fact, some report suppliers are now offering ample quantities of most pigments and vehicles. This is a recent switch but is certainly in line with the easing of many other chemicals and raw materials.

Government Needs

Bid Closing	Invitation No.	Quantity	Item
Procurement Division, Supply Service, Veterans			Administration, Washington 25, D. C.
August 11	A-18	564 can	Castor Oil
August 11	A-18	120 btl	Wrights stain
August 11	A-18	2304 jar	Wool fat
August 11	A-18	72 can	Glycerin
August 11	A-18	180 drum	
August 11	A-18	970 drum	Soap, medicinal soft
August 11	A-18	8520 btl	Ammonia solution, strong

District Engineer, Walla Walla District, Corps of Engineers, Walla Walla, Washington		
August 20	Eng 53-3B	135 tons
August 20	Eng 53-3B	1460 tons
August 20	Eng 53-3B	80 tons
August 20	Eng 53-3B	170 tons

Liquid asphalt, MC-0 or MC-1
Asphalt cement 100-120 penetration
Liquid asphalt, RC-2
Emulsified asphalt

Navy Purchasing Office, 111 East 16 Street, New York City, New York		
August 11	923-B	120000 lb
August 12	922-B	5000 ea

Soap, salt water
Charges, foam type

Business Service Center, General Services Administration, Region 9, 50 Whitehall Street, S.W., Atlanta Ga.		
August 11	SF-65	150 gal
August 11	SF-65	572 gal

Cement, Linseed Paste Fed. Spec. O-P-106
Enamel, Fed. Spec. TT-E-508 TT-C-595, Interim Fed. Spec. TT-E-489A
Oil, Linseed, Fed. Spec. TT-O-364, TT-O-369

General Services Administration Federal Office Building, 909 First Avenue, Seattle, Washington		
August 12	C-R-4526-1	500 gal

Traffic paint, yellow, in 50-55 gal. steel drums, TT-P-115

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1 BIGGEST SOURCE OF MERCURY in this country is the Mt. Jackson-Great Eastern Mine at Guerneville (Calif.).

Operated by the Sonoma Quicksilver Mines, Inc., it was one of the first to reopen in the slack period after the war.



4 MERCURY VAPOR condenses in tall towers. Operator is shown removing a bucket of the unrefined mercury.

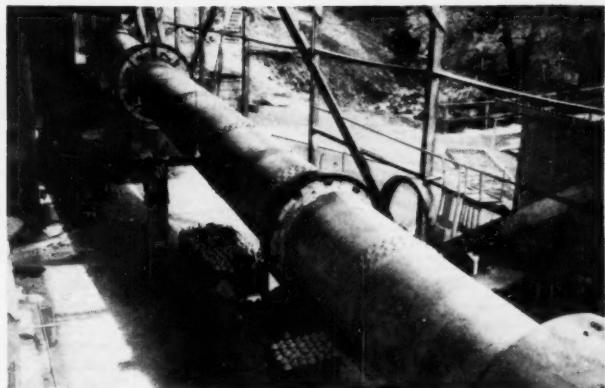


5 AS ONE OF THE LAST STEPS in the refining process, the operator pours the mercury "mud" onto a tray.

PRODUCTION



2 MINER PUSHES an empty ore car into tunnel that goes 280 ft. into the hillside.



3 CRUSHED ORE enters the upper end of this revolving kiln. Mercury vaporizes and exits through a flue near the top.

Quicksilver Comeback in Far West

"Volatile, inconstant." That's the dictionary's definition of "mercurial." It's also an apt description for the domestic mercury industry. For U. S. mercury producers, unable to compete with foreign prices in normal times, always sensitive to political and economic pressures, have never been able to survive in peacetime. Although they did a thriving business during the war, most of them folded up as soon as it was over. Today, however,

under the stimulus of:

- general rising prices and increased demand brought on by the Korean fracas and world tension,
- price shenanigans by foreign producers who were quick to take advantage of the situation,
- a government policy to support mining of strategic materials,

mining, refining and marketing of indigenous mercury is flourishing once more. And California, with 85%-90%

of the total production, has taken the lead among mercury producing states.

Witnessing the industry's resurgence last week, the CW camera toured the bustling Mt. Jackson-Great Eastern mine, just 70 miles north of San Francisco and the biggest mercury mine in the country. Although the cinabar ore that is treated is not rich in mercury—it runs about 8 lbs. to the ton—it yields a high purity mercury, free from arsenic, lead and antimony.



6 SEPARATION OF MERCURY from sulfur is carried out by stirring. A trap in the lower corner catches mercury.



7 REFINED MERCURY is poured and weighed by Mill Superintendent Jim Morris as H. F. Larsen looks on.

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Centrifugals, Bird 36" x 40", Bird, Continuous, Consolidated Products, 18 Park Row, N.Y. 38, N.Y.

Centrifugals, Bird 48"; Rub. Covered. First Machinery, 157 Hudson St., N.Y. 13, N.Y.

Colloid Mill Charlotte No. 20 used only few hours. Cast steel Rotor & Stator. Bargain. L. Stanhope, Rosemont, Penna.

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Filter Press, 30" x 30", iron, Sperry, steam heated, 30 chambers. Consolidated Products, 18 Park Row, N.Y. 38, N.Y. Barclay 7-0600.

Filter Press, 30" x 30", Aluminum, 45 Chambers. Consolidated Products, 18 Park Row, N.Y. 38.

Filter Press, 42" x 42", iron, Shriver, 18, 27, 36, 54 chambers (12). Consolidated Products, 18 Park Row, N.Y. 38.

Filter Presses, all sizes and types. Process Industries, 305 Powell St., Brooklyn 12, N.Y.

Filters, all sizes and types. Perry Equipment, 1415 N. 6th St., Phila. 22, Pa.

Granulator, Allis Chalmers, Ball, 4'6"x7", iron lined. Used, 100 hours. Consolidated Products, 18 Park Row, New York 38, N.Y. BA 7-0600.

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Mills, Raymond #5047 & 5057, High Side Roller, (2), Consolidated Products, 18 Park Row, N.Y. 38.

Mills, Taylor tube, 5"x22", 5"x20", 4'6"x18'6", 4'x13", stone lined, pebble charge (4). Consolidated Products, 18 Park Row, New York 38, N.Y.

Mixer, Lab, BP Vacuum, 7½ gal., jktd., MD. Complete. Eagle Industries, 108 Washington St., N.Y.C.

Mixers, 700 gal. Turbo, Simplex, jktd. (2). Consolidated Products, 18 Park Row, N.Y. 38.

Mixers, horiz. ribbon, 14'x7'6"x6", jktd. 450 cu ft. (2) Consolidated Products, 18 Park Row, N.Y. 38.

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Reactors—Plaudler 30 to 300 gallons. First Machinery Corp., 157 Hudson Street, N.Y. 3, N.Y.

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Tanks, 55, from 180-10000 gal., jktd. storage. agtd. Eagle Industries, 108 Washington St., N.Y.C.

Tanks, S.S. Storage & Mixing, all capacities. Process Industries, 305 Powell St., Brooklyn 12

Tanks, 2 10000 gal. 55 Storage, exc. Cond. Eagle Industries, 108 Washington St., N.Y.C.

Tanks, 6500 gal. capacity, steel storage, recovered from dismantled tank cars, coiled & non-coiled. Marshall Railway Equipment Corp., 50 Church St., N.Y. 7, N.Y.

Chemical Week • August 9, 1952

process industries

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PRODUCTION . . .

Titanium on Top

Take a metal that can command a market now estimated at 500,000-2 million tons a year if the price can be pared to 75 cents a lb. Add the fact that lowering the price is a technological problem the chemical industry is ideally equipped to solve. Subtract all raw material problems. You'll wind up with titanium and the explanation for a lot of recent, feverish activity. Occupying top spot on the chemical newsfront is not a new experience for titanium, of course. But last week it set something of a record when it made news on three counts: one process move by Union Carbide, another by Dow, and a planned tripling of capacity by Du Pont.

Probably the biggest surprise in the package is the news that Dow is currently pilot planting its own titanium process which is not a modification of the Kroll (magnesium reduction of titanium tetrachloride). Because of its know-how in the electrolysis of magnesium and its experience in chlorination, this immediately leads to speculation that Dow is working on an electrolytic reduction of titanium tetrachloride. For the present, however, Dow is keeping its own counsel on details of the process, even gives indication that the term, pilot plant, may give rise to an exaggerated view of its status.

Not In Yet: For some time, reports have been prevalent that Union Carbide was taking more than a casual interest in a titanium process developed by Eugene Wainer, research director for Horizons, Inc. They were confirmed last week when UCC told CW it had signed an agreement for non-exclusive rights to the titanium process. At the same time, the firm warns: "That doesn't mean we're in the titanium business; when we guess that step is still anybody's guess."

The agreement was signed with Horizons Titanium, jointly owned by Horizons and Ferro Corp. Details on the process are few and far between but it is certainly an electrolytic reduction. The probable intermediate is a double fluoride rather than the tetrachloride (CW, Dec. 8, '51). This is the background that led to the licensing:

While working under a Navy contract, Wainer developed the process. Horizons promptly formed Horizons Titanium with Ferro to move the development into the pilot stage, then a commercial plant if the pilot unit proved out. Shortly afterwards, the Navy, enthusiastic over the potential, estimated that the process would cut

production costs by "more than 80%."

Presumably, that meant the tag could be dropped from the present \$5 a lb. for titanium sponge to \$1 a lb. As it turned out, Wainer actually estimates it can be cut to 28 cents a lb.

But, though he is highly regarded in the industry, experts are quick to point out that his figures reflect laboratory experience, are subject to drastic revision on a bigger scale.

In a Big Way, Now: Last year, Du Pont turned out 500 tons of the 700 tons of titanium produced in this country. Then last week, it borrowed \$14.7 million (to be repaid with interest) from the government. The funds will be used to produce 13,500 tons over a five-year period. Since the government says that the firm will have to triple its production, that adds up to a present annual capacity of 900 tons, a future capacity of 2,700 tons.

What it means is that negotiations between Du Pont and the government—which have been under way for over a year (CW, Sept. 1, '51)—are concluded, and Du Pont will go ahead with its long awaited plant comparable in size to the Henderson (Nev.) plant of Titanium Metals. Although the company will not discuss the process to be employed, it's an odds-on bet that it will be a modification of the Kroll.

Four and More: The significance of all the activity is that four of the biggest chemical companies—Du Pont, Union Carbide, Dow and Monsanto—are now squarely in the titanium picture*. What's more, the field includes such sizable factors as National Lead and Glidden. More can be expected to join in the race to snare a portion of the market that can be reckoned in billions of dollars.

EQUIPMENT . . .

Screw Pump: Sier-Bath Gear and Pump Co. (North Bergen, N. J.) is introducing an internal gear and bearing screw pump for positive displacement of lubricating oils and other viscous fluids. Advantages claimed: cheaper maintenance, long rotor life and high efficiencies.

* Monsanto and National Research Corp. have pooled resources for research on titanium processing as did Glidden and Bohn Aluminum and Brass Corp. National Lead aside from its interest in Titanium Metals has a continuing research program including a pilot plant at Sayerville (N.J.) for an electrolytic process. Another firm worth watching is Crane Co., the Chicago valve manufacturer, now operating a ton-a-week pilot plant.

BOOKLETS

Chemicals

Silicone Rubber

23-p. booklet entitled "Imagineering with Silicone Rubber" contains summary of information for designers, purchasing agents, manufacturers, and others who use silicone rubber. Featured are properties and applications, available classes, and design specifications. Silicone Products Department, General Electric Co., Waterford, N.Y.

Air-Entraining Agent

8-p. folder on Vinsol air-entraining agent for concrete. The advantages of air-entrained concrete and methods employed in its production are listed. A list of suppliers is also included. Hercules Powder Co., Wilmington, Del.

Oils, Perfumes, Flavors

38-p. booklet entitled "Essential Oils, Perfume Compounds, and Flavors" contains price list and description of classifications such as essential oils, aromatic chemicals, floral perfume bases, imitation flavors, and vanilla products. Dept. 8, S. B. Penick & Co., 50 Church St., New York 7, N.Y.

Colloidal Graphite

6-p. bulletin on "Colloidal Graphite for Surface Coatings and Impregnation."

Contains uses and properties, methods of impregnation, and methods of applying surface coating. Bulletin No. 435, Acheson Colloids Co., division of Acheson Industries, Inc., Port Huron, Mich.

Equipment

Valves

18 dimensional data sheets on a line of valves for fluid control, of special interest to designer of new equipment in instrumentation or industrial fields. Hoke Dimensional Data Sheets, 147 South Dean St., Englewood, N.J.

Industrial Process Control

39-p. second quarter 1952 issue of "Instrumentation" includes technological articles on program control, time proportioning control, and graphic panels. Also contains description of ways in which companies apply instrumentation in measurement and control of important process variables. Industrial Division, Minneapolis-Honeywell Regulator Co., Philadelphia 44, Pa.

Heat Enclosures

Brochure which outlines development of the refractory arch and wall from early beginnings to present modern constructions. Applications in specific heat enclosure problems, graphs and tables for

selecting the proper type of construction, and special heating units are discussed. Request on business letterhead, M. H. Detrick Co., 111 West Washington St., Chicago, Ill.

Contract Meter-Relay

21-p. booklet describes Simplytrol contact meter-relays. A general description of the instrument with diagrams, discussions of mounting, cleaning, and servicing, and drilling templates are included. Assembly Products Inc., Main at Bell St., Chagrin Falls, O.

Carrier Amplifier

6-p. bulletin on 1-118 carrier amplifier which is designed for the smaller engineering and development laboratory. Characteristics and description of the instrument are included. Bulletin CEC 1522A, Consolidated Engineering Corp., 300 N. Sierra Madre Villa, Pasadena 8, Calif.

Dust Collector

Bulletin showing how working conditions are improved and valuable materials may be recovered through Dustube collectors. A discussion of the handling of hot and corrosive gases by synthetic filters is also included. Bulletin 342, Americal Wheelabrator & Equipment Corp., 1038 S. Brykit St., Mishawaka, Ind.

CHEMICAL WEEK • ADVERTISER'S INDEX • AUGUST 9, 1952

AMERICAN OPTICAL CO.	14	FINE ORGANICS, INC.	B49	SONNEBORN SONS, INC., L.	2
Agency—Southerland-Abbott, Advertising		Agency—Std N. Cotten Advertising Agency		Agency—Hicks & Greist, Inc.	
ANTARA CHEMICALS, DIV. OF GENERAL DYESSTUFF CORP.	3rd cover	GAYNER GLASS WORKS	27	TEXASSESEE PRODUCTS, CHEMICAL CORP.	33
Agency—J. Hayden Twiss, Advertising		Agency—Sommers-Davis, Inc.		Agency—The Griswold-Eshleman Co.	
ARCHER, DANIELS MIDLAND CO.	24	GROSS & CO. A	48	VELSICOL CORP.	43
Agency—The Bayless-Kerr Co.		HARSHAW CHEMICAL CO.	47	Agency—E. Los Humphrey, Advertising	
AUTOMATIC SPRINKLER CORP. OF AMERICA	37	HEYDEN CHEMICAL CORP.	back cover	VULCAN COPPER & SUPPLY CO.	19
Agency—The Robert A. Joyce Co.		Agency—Sommers-Davis, Inc.		Agency—L. F. McCarthy & Co.	
BARTH DIVISION, ALLIED CHEMICAL & DYE CORP.	44	INLAND STEEL CONTAINER CO.	40		
Agency—Anderson & Cairns, Inc.		Agency—Weiss & Geller, Inc.			
BERKSHIRE CHEMICALS, INC.	25	KENNEDY CAR LINER & BAG CO.	32		
Agency—J. Hayden Twiss, Advertising		Agency—Grubb & Peterson, Advertising			
BROOKFIELD LABS. INC.	730	KESSLER CHEMICAL CO., INC.	76		
Agency—F. P. Walther Jr. & Assoc.		Agency—Sommers-Davis, Inc.			
CARBIDE & CARBON CHEMICALS CO. A DIVISION OF UNION CARBIDE & CARBON CORP.	31	KOPPERS CO., INC. CHEMICAL DIV.	1		
Agency—J. M. Mathes, Inc.		Agency—Batten, Barton, Durstine & Osborn, Inc.			
CELANESE CORP. OF AMERICA	50	LUCIDOL DIVISION NOVADEL'AGENE CORP.	B8		
Agency—Ellington & Co., Inc.		Agency—Landshelf, Inc.			
JOHN A. CHEW, INC.	42	MC GRAW-HILL BOOK CO.	51		
Agency—J. Hayden Twiss, Adv.		Agency—Wesley Aves & Assoc.			
CHURCH & DWIGHT CO., INC.	86	MIXING EQUIPMENT CO., INC.	35		
Agency—J. Walter Thompson Co.		Agency—Charles L. Rumrill & Co., Inc.			
THE COTTON CHEMICAL CO.	4	MUTUAL CHEMICAL CO. OF AMERICA	10		
Agency—The W. N. Gates Co., Inc.		Agency—J. Hayden Twiss, Advertising			
COMMERCIAL PETROLEUM & TRANSPORT CO.	78	NATURAL PRODUCTS REFINING CO.	20		
Agency—Laughlin-Wilson-Baxter & Persons Adv.		Agency—Michel-Cather, Inc.			
CORN PRODUCTS REFINING CO.	36	NOPCO CHEMICAL CO.	5		
Agency—J. Hayden Twiss, Advertising		Agency—Levin, Williams & Saylor			
DOGE & OLcott, INC.	41	PFAUDLER CO.	38		
Agency—Peck Advertising Agency		Agency—Charles L. Rumrill & Co., Inc.			
DOW CHEMICAL CO., THE	34	PFIZER & CO., INC. CHARLES	7		
Agency—MacManus, John & Adams, Inc.		Agency—McManus, John & Adams, Inc.			
DOW CORNING CORP.	26	RHEEM MANUFACTURING CO.	9		
Agency—Don Wagnitz, Advertising		Agency—Campbell-Ewald Co., Inc.			
ERIEZ MANUFACTURING CO.	13	SHELL CHEMICAL CORP.	2nd cover		
Agency—John Mather Lupton Co., Inc.		Agency—Hazard Adv. Co.			
ESSO STANDARD OIL CO.	3	SINDAR CORP.	T49		
Agency—McCann-Erickson, Inc.		Agency—Hazard Adv. Co.			

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